THE PACIFIC

GEOGRAPHY

(Physical, Political, and Commercial)

STANDARD III.

Specially written to meet the requirements of the New Zealand Syllabus of Instruction

Auckland, Christchurch, Dunedin and Wellington, N.Z.
Melbourne and London

WHITCOMBE & TOMBS LIMITED

1/-

Herbert Spencer

Steffano Webb, photo

Canterbury Plains from the Cashmere Hills, Christchurch, looking north-west (old plains composed of soil and rock washed down by rivers from the Southern Alps and their foothills)

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NEW AND REVISED EDITION

AUCKLAND, CHRISTCHURCH, DUNEDIN AND WELLINGTON, N.Z.
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NOTE TO TEACHER.

This revised edition of the PACIFIC GEOGRAPHIES is designed to provide a complete course of instruction in Physical, Mathematical, Political, and Commercial Geography for each of the Standards of the Middle and Senior Divisions, as prescribed by the New Zealand Syllabus.

The text-book is intended merely to supplement and not to replace class instruction by the teacher. Although the facts are stated didactically in the text, the pupils should not be introduced to them directly in this form. They should be led to make observations and to carry out experiments that will enable them to discover the facts for themselves; then and not till then should they be directed to study the summary of the facts as set out in the text.

The information provided is considerably greater than Standard III. children can reasonably be expected to master. It is left to the discretion of the teacher to *make a selection of the subject matter* for his scholars to study. In particular a large number of towns have been given on pages 76-87, with the sole object of affording the teacher as wide a choice as possible in his selection of those he may deem most suitable or most applicable to the conditions (industries, etc.) of his particular school or district. Thus Westland children should be expected to know more about Westland than about Otago, Auckland, or the other Provinces.

CONTENTS.

LIST OF ILLUSTRATIONS.

THE
PACIFIC GEOGRAPHY

STANDARD III.

PART I.—PHYSICAL GEOGRAPHY.

1. OBSERVATION OF NATURAL PHENOMENA.

1. There are many things that even young children know, or can know, without learning about them from books. They know their way to school, and their way home again when school is over. They know whether the road to school is a level one; or whether they have to go up hills, or down them, or past rocky cliffs or clay banks; or whether they have to cross other roads, or streams, or railway lines, in order to get to school.

2. From their own homes, or from the school, perhaps some of the children can see a flat piece of land with a stream of water flowing across it; while farther away there may be higher pieces of land that are sometimes white with snow. Or, if some of them live near the sea, they will notice that in some places the land runs away out into the sea, and in others the sea curves into the land. It may be that there is a piece of land in sight with the water all around it, or nearly all around it; or a piece of water that has land all around it.

3. Perhaps, too, they will notice that sometimes the sea comes quite up to the rocks on the shore, but that at other hours of the day there is a long strip of wet sand between the edge of the water and the rocks. **Why is this?** Why does the river flow across the flat land from the far off hills? Why is there sometimes snow on the tops of the hills, when there is none near the houses in the fields? What are the clouds that often float about overhead? and why, as we are told, does rain, or hail, or snow fall from them? Why are the days sometimes long and warm? Why, at other times, are they short and cold?

4. Some of these things, and the answers to questions such as these, children may often come to learn for themselves by **observing** or taking notice of the things that are happening around them every day. About other things they may learn by making experiments, like some of those given in this book. Other things, still, about the world they live in, they will learn by attending to what their teachers tell them, or from what is told them in books, or from what they may see in pictures.

5. In time, too, they will come to know what the differently shaped pieces of land and water are called; where the snow comes from that they see on the hills; why day is followed by night, and night by day again. They will learn why in summer the days are long and generally warm; and why in winter they are short and generally cold. They will learn, too, where the different things they eat, or drink, or wear, are made, and how some of them are brought from far-off lands where other people live.

6. They will also come to know many other things about the great world they live in, and about the different kinds of people who live there. They will learn the names and habits of the plants and

animals that are found in their own country, and in other lands. They will find out where coal, and gold, and iron, and other useful substances may be obtained; where wool and cotton are grown; where clothing is made; and what becomes of all the wheat, and oats, and wool, and other things that are grown, or are made, in their own country.

7. When they are learning about any or all of these matters they are learning Geography.

The earth in space

2. THE SHAPE OF THE EARTH.

1. When we look at the full moon we see that, in shape and appearance, it is quite round, something like a large shining plate, or a disc of silver.

2. The stars, too, appear to be round and shining orbs, like silver or golden coins.

3. As the sun and moon, and all the other heavenly bodies, appear to be round when we look

at them, it is not unreasonable for us to suppose that our earth also is of a round shape. For other reasons, also, which will be explained later on, we are now quite certain that the earth is a round body, not like a shilling or disc of metal, but like a marble, a ball, or an orange, or like the school globe when removed from its frame.

The shadow at noon is the shortest in the day.

3. NORTH AND SOUTH LINE.

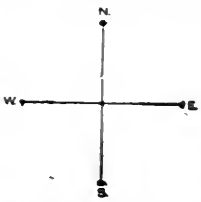
1. If a smooth post, tapering to a point at its upper end, be fixed quite upright in the playground, it will be noticed that its shadow on a clear, sunny day will be always changing both in length and position. Up to midday the shadow will become shorter and shorter, and its direction will be continually changing from west to south. After midday it will grow longer and longer, changing from south to east, until sunset, when it will disappear.

2. The same thing will be noticed in regard to other objects. The shadows of trees are longer at sunrise and at sunset than they are in the middle of

the day. Children will notice that their own shadows are shorter when they are standing in the playground at midday than when they are coming to school in the morning, or are going home in the afternoon. If some of them go out after tea they will see that their shadows are still longer than they were earlier in the afternoon.

3. We can see that the sun appears to rise higher and higher in the sky from early morning until midday, and then it seems to sink lower and lower until sunset, when it vanishes. At midday the shadow of the post in the playground will be at its shortest. If a stout peg be driven into the ground at the exact spot where the shortest shadow ends, and a straight line be drawn from it to the post, and then be continued in the same line past the post, where another peg can be driven, we shall have what is called a **north** and **south line.**

4. A person standing at the peg where the shadow ends, and looking towards the upright post (that is, towards the midday sun) will be looking due **north.** The shadow itself will be pointing due **south.** If a line be drawn out from the post, at right angles to the north and south line (as in the diagram), the end of it on the right of the person who is looking towards the sun will be towards the place where the sun rises, which is called the **east**; while its other end will be towards the setting place of the sun, which is called the **west.** We shall thus have an **east and west line,** as well as a north and south one.



4. DIRECTION.

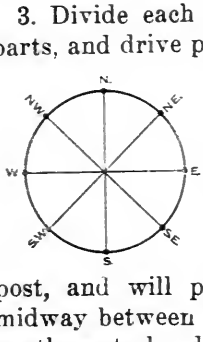
1. When we are looking towards the sun at mid-day, we are looking towards the north, or in a **northerly** direction; while our shadow is pointing towards the south, or in a **southerly** direction. If we now stretch out both our arms, our right hand will be pointing towards the east, or in an

Direction picture

easterly direction, and our left hand will be pointing towards the west, or in a westerly direction.

2. If we tie one end of a long string round the bottom of the post in the playground, and through a loop at the other end of the string place a sharpened or pointed stick, we can trace out on the ground a fairly large circle, which will be divided into four equal parts by the north and south and the east and west lines, as can be proved by measurement.

3. Divide each of these four arcs into two equal parts, and drive pegs into the ground at these points.



The peg midway between the east and the north will lie in a north-easterly direction from the post, and will indicate the **north-east**. The one midway between the north and the west will lie in a north-westerly direction from the post, and will point to the **north-west**. The peg midway between the west and the south will lie in a south-westerly direction from the post, and will indicate the **south-west**. The remaining peg, between the south and the east, will lie in a south-easterly direction from the post, and will be **south-east** of it.*

5. THE DIRECTION FROM WHICH THE WIND IS BLOWING.

1. It is interesting, and sometimes useful, to know from what direction the wind is blowing, for the reason that some winds usually bring wet weather, and others fine weather. Southerly winds blow across the great Southern Ocean from the frozen lands round the South Pole. They are therefore cold winds, and usually bring rain. A north-west wind blows from the direction of warm Australia across the Tasman Sea to New Zealand. It is therefore warmer than a southerly wind, and brings plenty of rain to Westland, and snow to the Southern Alps. After it crosses the Alps, on the western slopes of which it sheds its moisture, it blows across the Canterbury Plains as a dry wind. That is, it seldom brings rain to Canterbury.†

*Additional interest is given to this exercise if it be repeated in the school garden, and in spring the direction lines are drilled and sown with cress or parsley or planted at a suitable time with lobelia.

†The reason why different winds are likely to bring different kinds of weather will be enquired into in other numbers of this series. See also diagram on page 28.

2. By making use of the upright post, and the north and south, and the east and west lines, in the playground, it is easy for children to tell the direction from which the wind is blowing.

6. PICTURES, PLANS, MAPS, AND MODELS.

1. The picture on the next page shows part of the inside of a schoolroom, as it would appear to a person standing at some little distance to the right of the class, and facing the blackboard just as the boys are doing.

2. As the person cannot see what is behind him, without turning round, the wall at the back of him is not shown. He can see, however, two walls, the window, the floor, the ceiling, and the sizes and positions of the desks, blackboard, cupboard, and any other objects on the floor, or on the walls, at either side or in front of him.

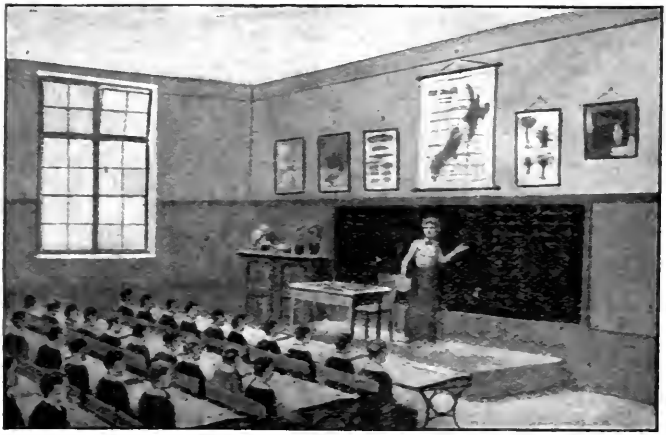
3. This drawing is a **picture** of the part of the room which the person can see without moving; and in it are shown the objects there, as they appear to him from where he is standing.

4. The drawing below the picture shows the floor of the same room with the relative sizes and positions of the desks and other objects on it.

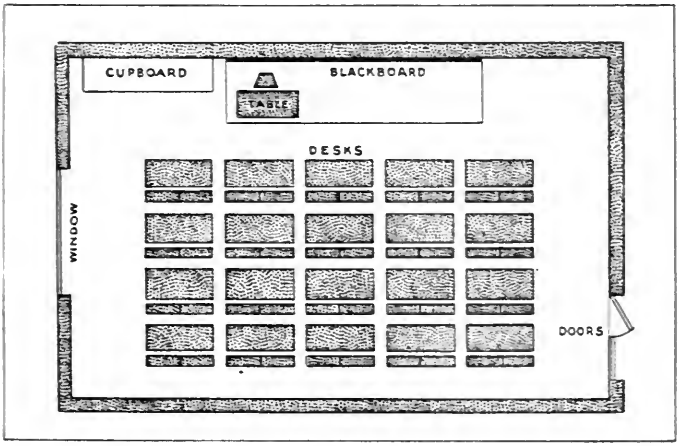
(1) By the **relative** sizes of the desks, etc., is meant their sizes when compared with the size of the floor and with one another. Thus, if the floor of the room is 20 feet (240 inches) broad, and in the drawing its length measures only 3 inches, the floor itself will be 80 times as long or as broad as it is shown in the drawing; or the dimensions of the drawing will be one-eightieth of those of the floor.

(2) Similarly, if the desks were 3ft. 4in. (40 inches) long, the top of each desk in the drawing would measure ½ of an inch in length, and the other objects, and the spaces between them, would be in the same proportion.

5. The drawing on the last page, then, is **called a plan** of the floor of the room; or, briefly,

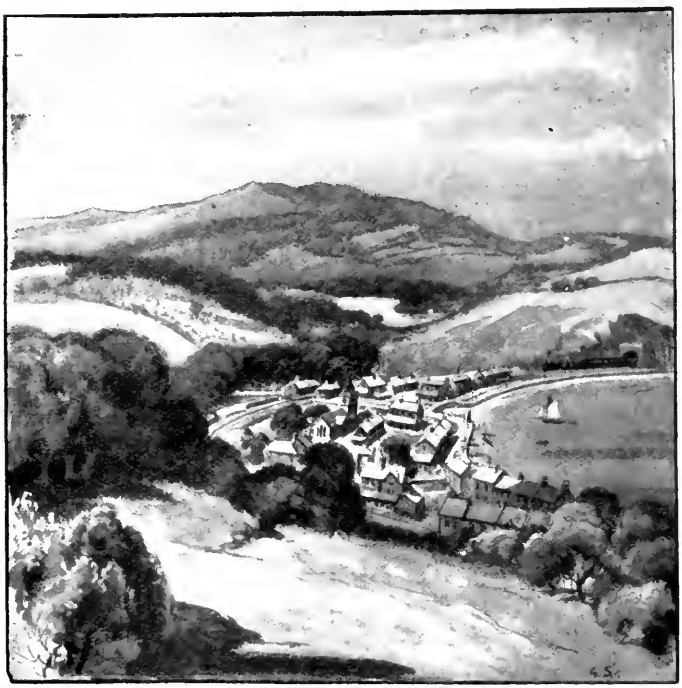


Picture of a schoolroom



Plan of the same schoolroom

a **ground plan**, because it shows on a small scale the shape and size (length and breadth) of the floor, and the relative shapes and sizes of the objects resting on the floor or ground.

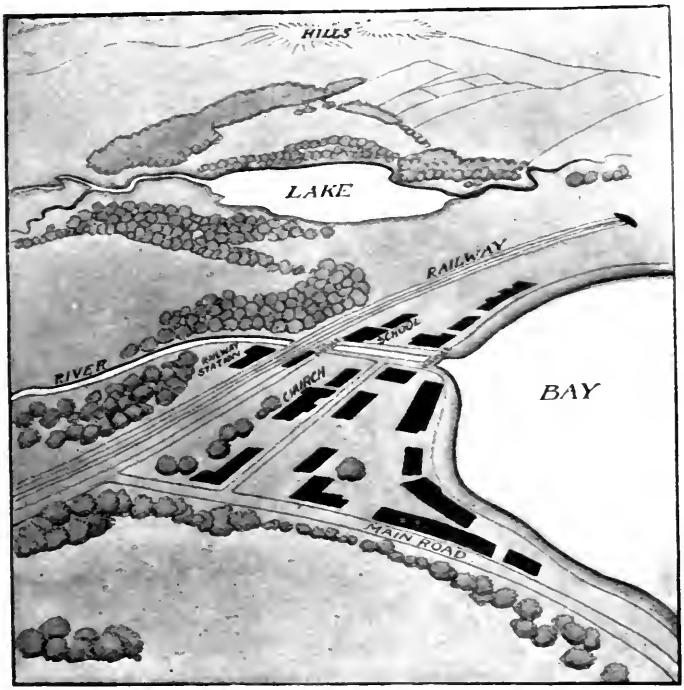


Picture of a school district

An exact drawing of the walls of a room is called an **elevation**, because it shows the **height** of the walls, as well as their **length** and **breadth**, together with the relative sizes of the windows, doors, and other objects on the walls.

6. A **plan** of the district surrounding the school would show the relative sizes and positions of the adjoining sections of lands, and of other objects near: such as the position of neighbouring roads,

and the direction in which they lead; the course and position of the neighbouring streams and rivers; and the situation of hills, mountains, or plains near it. If the plan were accurately drawn to scale, the



Plan of the same district

distance of the school from any stream, hill, road, or other object shown on the plan could be measured or calculated.

7. A plan of this kind is generally called a **map**. We speak of the plan of a house or other building, or of a section of land; but it is usual to speak of the **map** of a town, district, country, or other portion of the earth's surface. A map of a portion of the **sea is sometimes called a chart.**

8. On page 16 is given a picture of the district surrounding a school. Compare this picture with the plan of the same place shown on the

G. E. Mannering, photo

A View of Mt. Cook from Mt. Ollivier.

opposite page. The picture gives us an idea of the district as it appears to the eye of a person looking at it; the plan shows us the relative sizes and positions of such different objects in the picture as

The Bowen Fall, at the head of Milford Sound. [*H. C. Fearl, photo*

the railway line and station, the streets or roads, the hills, streams, and other portions of water.

9. The school globe is a **model** of the earth on a small scale. The relief maps of the North and South Islands of New Zealand at the end of this book are pictures of a model of the surface of New Zealand showing the shape of the land, the rivers and valleys, and the heights of the mountains.

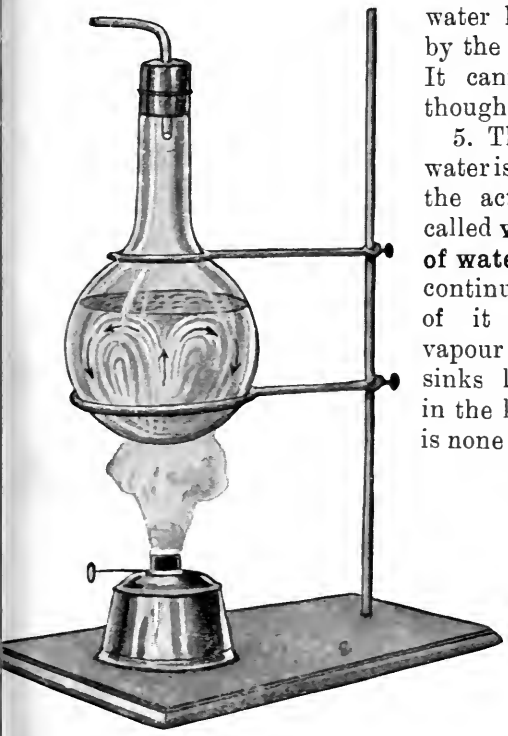
7. WHAT HAPPENS WHEN WATER IS HEATED?

1. The answers to this and the next question may be learned from observing one or two things that are happening around us every day.

2. Let us first of all notice what happens when a kettle of water is placed on the fire and kept there for some little time. If one's finger be dipped into the water from time to time it will be felt that the water gets warmer and warmer until it soon becomes too hot for the finger to be kept there without great pain. If the lid of the kettle be lifted now and then, even before the water boils, little wreaths or clouds of steam will be seen rising from near its surface.

3. When the water boils, more steam will be seen issuing in puffs of cloud from the spout, or from near the surface when the lid is off. If we look very closely at the end of the spout, we shall see that the steam-cloud begins, not quite at the end of the spout, but at some little distance from the end; and that, between the spout-end and the beginning of the steam-cloud, there is apparently nothing.

4. There really is something there, however; for if one's finger be placed in the apparently empty space it will be swiftly withdrawn, probably in a scalded state. The something that is there is a **gas**, into which some of the water has been turned by the heat of the fire. It cannot be *seen*, although it can be *felt*.



Water being heated

5. The gas into which water is changed through the action of heat is called **vapour** or **vapour of water.** As the water continues to boil, more of it is turned into vapour; and the water sinks lower and lower in the kettle until there is none of it left. All the water has then been changed into vapour.

6. When water is turned into vapour it is said to have evaporated, and the process is called **evaporation.**

8. WHAT HAPPENS WHEN VAPOUR IS COOLED?

1. The answer to this question can also be easily given after making a simple experiment or two, and carefully observing what happens.

2. If we place a cold dry spoon in the apparently empty space between the steam-cloud and the spout-end of the boiling kettle, mentioned in the last section, and then withdraw it, we shall notice that the spoon is now covered with tiny drops of water. Some of the hot invisible vapour has been turned back again into water by contact with the cold spoon.

3. Similarly, in the case of the visible steam-cloud near the spout-end, the vapour has already been turned into very small drops of water, because the air around is cooler than the vapour itself. If a cold dry spoon be placed in this visible steam cloud, and be then withdrawn, the drops of water on it will be seen to be larger than before; for the little water-drops already formed by the cooler air have run together to form larger drops on the cold spoon.

Condensation

4. The steam which we see coming from the spout of the kettle, or the waste-pipe of a steam-engine, is not vapour. It is simply a cloud formed of very tiny particles of water—"water-dust" it has been called—into which the vapour itself has been turned by contact with the cooler air through which it has passed.

5. By making simple experiments then, like those given above, we may learn that when vapour is cooled it changes back into water again. The process by which this occurs is called **condensation**.

9. CLOUDS AND MIST.

1. We noticed that, even before the water in the kettle came to the boil, small clouds of steam could be seen rising from its surface. This shows us that as soon as water begins to get heated, even long before it actually boils, some of it is being turned into vapour. In fact, all the time water is exposed to the air, some of it is being constantly changed into vapour.

Cirrus or feather clouds

2. When wet clothes are hung out to dry, the heat of the sun, the warm air, or the drying wind, is constantly turning a portion of their moisture into vapour. When the moisture is all gone, the clothes are dry.

3. In the same way the sun and the wind dry up the puddles on the road-side; that is, they turn their water into vapour that floats away through the air unseen. If a basin of water be left outside for a day or two in dry weather, or a wet saucer be placed in the sun on the window-sill for some minutes, the water will soon disappear. Where has

it gone to? It has been changed into vapour that has floated away through the air.

4. Think of all the streams and rivers, all the lakes and seas and oceans, on the surface of the earth. All the time the sun is shining, or the wind is blowing, portions of this vast quantity of water are being daily and hourly changed into vapour. This vapour floats about in the air around and above us. When it cools a little, some of the vapour is changed into tiny drops of water, sometimes called "water-dust." This water-dust is so fine and light that it floats in the air, and can be seen; just as the floating dust particles in a room can be seen when a sunbeam shines on them.

5. The water-dust that can be seen floating about in the air, sometimes far above us, we call **clouds.**

6. Sometimes the vapour is cooled in the lower air quite close to the surface of the earth. The cloud thus formed is then called **mist,** or **fog.**

7. Where are clouds and mist most frequently seen? Is it not near the tops of mountains, or along the hill-sides? Why should this be the case?

8. We know that, at night especially, it is generally colder on the hill-side* than in the valley or on the plains below. It is colder still on the tops of the high mountains. When the warm vapour from the streams and seas, that is constantly floating about everywhere, comes in contact with the cooler air over the hills and mountains, it becomes chilled, and condenses into water-dust, thus forming the mist† and clouds that we see there.

Experiment:—Blow on a cold slate. What do you notice? Watch the damp part of the slate. What happens? Where does the moisture go?

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*Is Cashmere warmer or colder than Christchurch? Why?

†Mist may sometimes be seen hanging a little distance above the water in a river, and following all the windings in its course.

10. CLOUD FORMS.

1. As there is a far greater quantity of water in the oceans and seas than there is in all the rest of the waters of the earth put together, most of the vapour that goes to form the water-dust, or the snow and ice crystals, of the clouds, comes from the sea.

2. Clouds are of many beautiful shapes and sizes. Some look like puffs of smoke, or tufts of fleecy

Cumulus or heap clouds

wool. Others spread in sheets or layers across the sky. Again, some are fringed and curled like feathers; while others still are dark and threatening when rolling across the sky.

3. The four most noticeable kinds of clouds are those known as **cirrus**, or **feather** clouds; **cumulus**, or **heap** clouds; **stratus**, or **sheet** clouds; and **nimbus**, or **rain** clouds.

4. **Feather clouds**, or "mares' tails," as they are sometimes called, may often be seen at a great height in the sky. These clouds vary greatly in shape, some

having a beautiful feathery appearance like ostrich plumes. The rings often seen round the sun and moon consist of **cirrus** or feather clouds.

When feather clouds are seen in abundance a change of weather may generally be looked for.

5. **Heap clouds** are formed by the rising vapour on warm, sunny days. They are heavy-looking, thick white clouds, usually flat on the under surface, rising in heaps or domes to a great distance on high.

Stratus or sheet clouds

These clouds look very beautiful when flushed and crimsoned by the rays of the setting sun.

6. **Sheet clouds** spread over the sky in layers or strata, and are therefore sometimes called **stratus** clouds. They are usually low in the sky, often hiding the tops of the hills from view. They are very common during stormy weather; especially in winter, when they may be seen for days together covering large portions of the sky. Very often rain in quantities falls from them.

7. **Rain Clouds** are of a blackish or dark grey colour, and often cover the whole of the heavens, although they may be of all sizes and shapes. They are sometimes called **nimbus** clouds, from the Latin word "nimbus," which means a "shower."

8. Children should make a point of watching the clouds as they appear in the sky from day to day. They will soon learn to recognise and name the different kinds they see.

11. RAIN AND HAIL.

1. When the particles of water-dust forming the clouds are from any cause, such as increased cold,

Nimbus or rain clouds

made to run together so as to form larger drops these larger drops often become too heavy to float about in the air. Their increased weight then causes them to fall to the earth. The drops that fall in this way we call rain-drops, and we have **rain**.

2. More rain generally falls on mountain tops than anywhere else. As you know, it is much colder there than it is nearer sea level. When a moist wind blowing off the sea has to pass over a cold

mountain, the moisture in it is turned first into cloud, and then into rain, hail or snow. The picture shows what happens when the moist wind coming from the Tasman Sea meets the great chain of mountains called the Southern Alps.

3. When the rain-drops pass through some very cold air, they are sometimes frozen solid, and so form hail. **Hail** is simply frozen rain-drops.

Diagram showing wetter and drier sides of mountains.—A typical watershed.

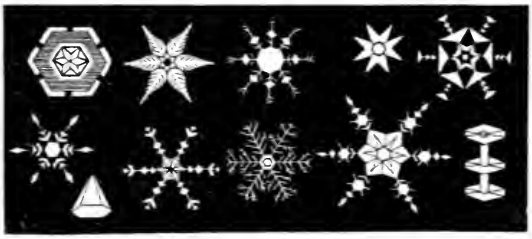
12. SNOW AND ICE.

1. **Snow** is really frozen vapour. When the vapour that is floating about in the upper air becomes suddenly frozen, it changes at once into beautiful snow crystals of various shapes. When these crystals, or snow-flakes, are too large and heavy to be supported by the air, they fall to the earth, and we have a fall of snow. As they fall they are often jostled against one another by the wind, and the crystals get broken and jumbled together. Some of them, however, if the air is very still, reach the earth in an unbroken state, and their beautiful shapes may be seen when carefully inspected.

2. **Ice** is frozen water. When water reaches a certain degree of cold, known as the **freezing point**, it is changed into ice. Water when very cold thus changes from a liquid to a solid state. As it is the

freezing coldness of the air that causes this change, the part of the water that is nearest to the cold air will be the first to change into ice.

Experiment:—Plunge a piece of ice deep into a bucket of water, and let it go. What happens to the ice? Why?



Snow crystals

13. ACTION OF WATER.

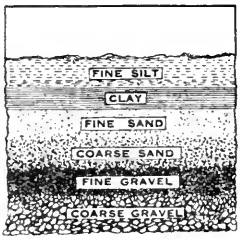
1. Many children, especially those in country districts, when on their way to school, have to pass through cuttings, or go past clay banks on the road-side, as the road winds up and down. The sloping faces of most of the cuttings will be seen to be scarred with networks of furrows, or tiny channels. What are these networks of channels? and how do they come there?

2. On a wet day, perhaps tiny streams of water will be seen flowing or winding down these furrows. The water will not be clear. It will have a yellow or muddy appearance; and the furrows will be deeper and fuller of water nearer the bottom than near the top of the sloping bank. At the foot of the bank all these muddy little streams join and flow down the road-side channel.

3. Next day, if it is fine, look at the road-side channel again. Perhaps it will be free from running

water, and a thin coating of mud, clay, sand, and gravel—in separate layers, one above another—will be found on its surface. Where do these layers of material come from? They have been washed into the channel by the little streams that were seen trickling down the face of the cutting the day before, or by those flowing along the higher part of the road.

4. As the water in the channel began to run less quickly and then to stop flowing altogether, the small particles of clay, and other material, gradually sank to the bottom, and were dropped or **deposited** on the road-side channel. The heavier particles sank first; and the lighter ones were carried farther along until the water became still, or nearly still, when they, too, settled upon the bottom.



Order of deposits in still water

5. Thus, in places where the bed of the channel is slightly hollow, pools will be formed as the water ceases to flow. These will soon dry up, if the

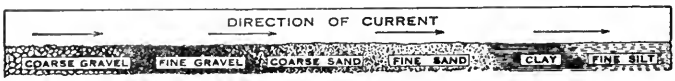


Diagram showing order in which sediment settles in running water

weather continues fine, leaving behind **a deposit** or **sediment** of gravel, sand, and clay. The coarser gravel, being the heaviest, will be found at the bottom; finer gravel will come next. Over this will be layers of coarse sand, and then fine sand and

clay. On the top of the clay will be found a coating of fine silt, mud or soil.

6. Anyone observing the clay bank may also notice that here and there overhanging ledges of turf and soil are to be found. The running water has washed away the clay beneath these places or undermined the bank there. The top is held together by roots until its support is washed away. Then it falls down as a tiny landslip into the channel beneath and is carried away by the running water.

7. If the clay cutting be closely observed from time to time throughout the year, as the children pass to and from school, it will be noticed that more and more of it is being crumbled or worn away through the action of the water. In winter the water in the pores and cracks sometimes freezes. The frozen water in them takes up more room than did the unfrozen water, and therefore widens the pores and cracks, or bursts the earth asunder in crumbling fragments, just as a bottle of water will burst into fragments when the water freezes.

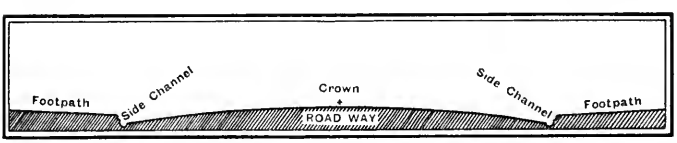
8. The portions of earth and clay thus broken up by the frost and rain are further worn away by succeeding frosts and rains, and are carried away and worn still finer by the little streams of rain-water; and so the process of crumbling or wearing away portions of the land by the action of flowing water goes on from day to day, from month to month, and from year to year.

9. The little streams of water mentioned in the last paragraph are really tiny rivers, and therefore do the same kind of work as a river. All the time a river is flowing it is washing sand, gravel, and clay from the land past or over which it flows, and the current carries this material onward until it gradually sinks to the bottom, or is borne out to sea where it is deposited on the bed of the ocean.

14. A RIVER AND ITS PARTS: WATERSHED, VALLEY, GORGE.

1. When we have a shower of rain, the water that falls on our streets and roads runs from the crown of the road, and from the footpaths, into the channels between them. These, when heavy rains fall, soon become little **rivers** of muddy or discoloured water.

2. The roads and streets are sloped in this way so that the water may easily run off them into the side channels which carry it away. They are thus kept fairly dry and clean, even in wet weather. The discoloured water in the channels is due to the mud, sand, and gravel that the tiny streams of running water have washed from the higher parts of the road and footpaths. When the channels are dry, some of this mud and silt will be found deposited along them.



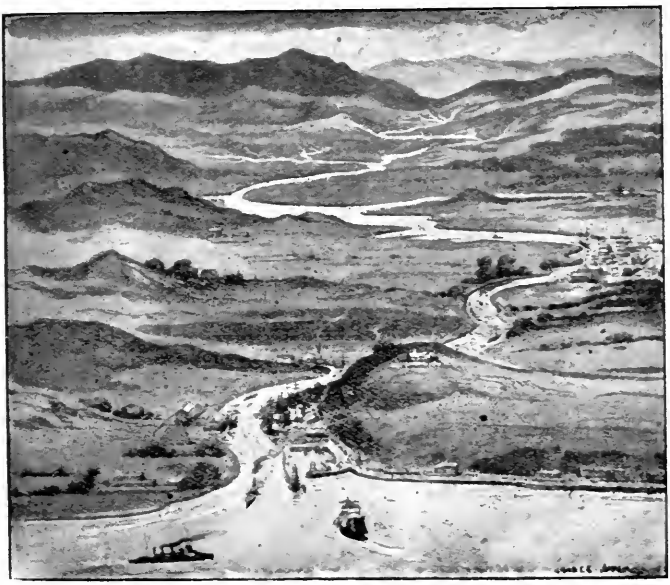
Section of a street to show drainage

3. Similarly, the rain that falls on one side of the roof of a house flows down it into the gutter or spouting on that side, while that which falls on another face of the roof flows in a different direction into another gutter. The ridge of a roof, or the crown of a road, that separates the differently flowing streams of rain-water, is really a **water-parting**, or what is more generally called a **water-shed**.

4. In the same way a high piece of land, such as a hill, or a range of hills or mountains, separates the streams of water running down its different sides, and forms a natural watershed

5. When two high pieces of land are close together, the lower land between them is called a **valley**. If the valley is very narrow, and has steep, rocky sides, it is often called a **gorge**.* Through this the river has had to cut its way in order to reach the lower land below.

6. Into the lowest part of the valley, the rain that falls on its sloping sides makes its way (sometimes



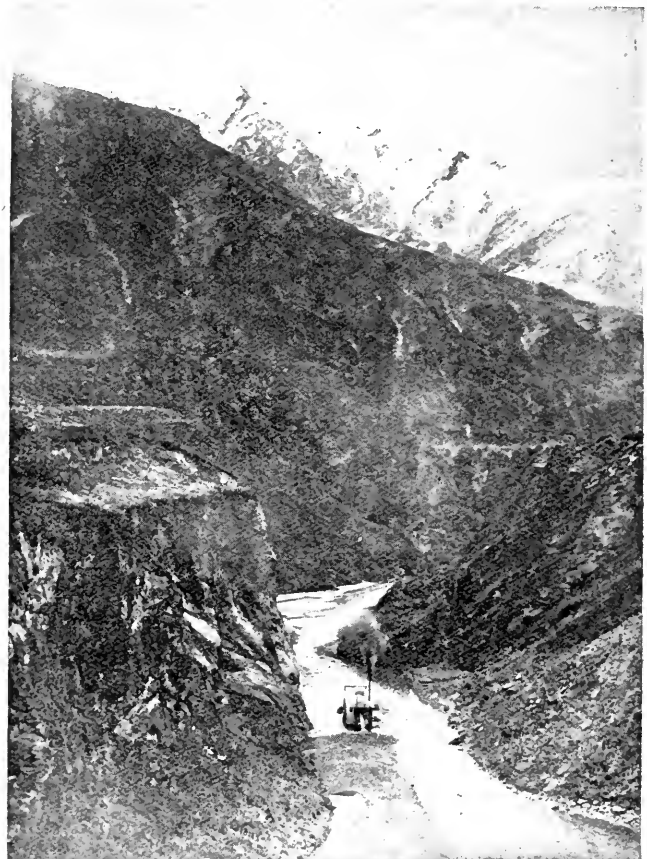
A water-shed and river course

underground), and then flows as a **stream** or **river** until it reaches a larger stream flowing onward to the sea.

7. Sometimes the river flows into a great hollow or depression in the land. This it will fill up with water, and a **lake** will be formed, from the lower part of which the river will continue its course to

*See picture on page 34.

the sea. Smaller streams that have been collecting in other channels will flow into it as it proceeds. These are called **tributaries** or **affluents.**



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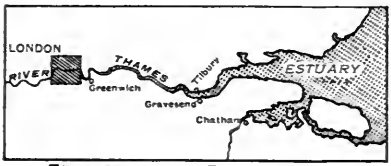
A river gorge (Shotover River, near Lake Wakatipu). Note the gold-dredge at work.

8. Where the river begins is called its **source.** This is often a spring issuing from the hill-side. The

bed of the river is the portion of land over which it flows, either in one stream or in several streams. Where the river is actually flowing is called its **channel**. The **banks** of a river are the portions of land on either side of its bed past which it flows; the **right bank** being on a person's right hand as he goes with the current of the river towards its mouth. The **left bank** will then be on his **left hand side**.



ESTUARY OF THE RIVER THAMES.

The **mouth** of a river is where the river ends in a sea or lake. If the river-mouth widens out into a broad sheet of water just before it enters the sea, the sheet of water so formed is called an **estuary**, or a **firth**.

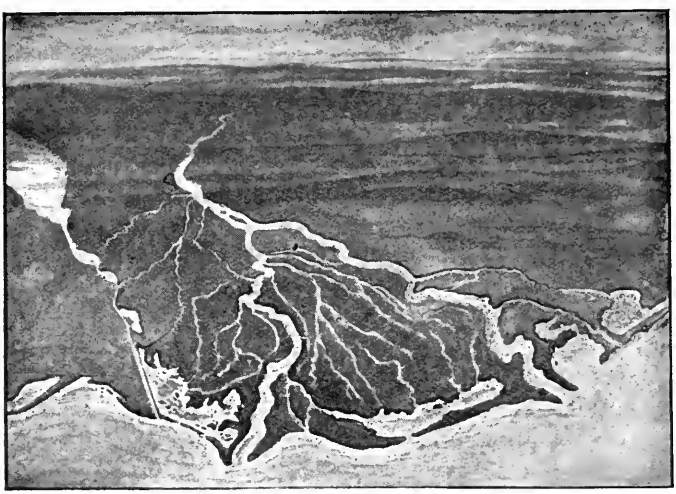
9. Sometimes a river flows into a large sandy plain where its waters disappear, soaking into and through the sand, and flowing in underground streams, until the river issues forth in another place lower down. If a bed of clay, however, through which the water cannot sink any further, lies near the surface of the sandy plain, a **swamp** will be formed. Many rivers end in swamps, or have swampy lands here and there along their banks, some of the surface water of which is carried off by evaporation. Much of the land upon which Christchurch is built was once swamp.

10. A **river-basin** is the portion of country through which a river with its tributary streams flows. In other words, it is the portion of country drained by the river and its tributaries.

15. RIVER DELTAS.

1. Even a slow river winding through a large plain carries down to the sea vast quantities of mud and

other material. Near its mouth its current meets the incoming tide from the ocean. The meeting of the slower current of the river with the faster rush of the tide causes something approaching to still water at a place some little distance inside the river-mouth. There the solid material brought down by the river will rapidly sink to the bottom, forming a mud or gravel bank which will gradually rise to



Delta of the Nile River

the surface as fresh material is heaped upon it. In flood-time, more material will be heaped up there, so that, after many floods have come and gone, the top of the bank will come to be higher than the usual surface of the river.

2. The bank formed in this way will check the flow of the river in that direction, and acting like a large solid wedge, will cause it to flow into the sea by two or more mouths. The arms or mouths of the river will thus in time enclose either one piece or

several pieces of triangular land, shaped as a whole something like a wedge, or the Greek letter Delta (Δ), with the broad part of the wedge towards the sea. From its resemblance to the latter this triangular-shaped piece of land is called a **delta**.

Delta lands, being formed of very fine rich soil, are usually very fertile, and produce abundant crops. Such are the deltas of the Nile, the Mississippi, the Ganges, and on a smaller scale, that of the Clutha.

16. RIVER BARS.

1. A very fast river will carry much of its solid material a little distance out to sea, where its current, checked by the slower current of the tide, will form still water. A great quantity of the soil and gravel it brings down will therefore be deposited on the seaward side of its mouth, and will form a **bar**, making shallow water at that place.

2. Many of the fast rivers of Westland, such as the **Grey**, and the **Taramakau**, have bars just beyond their mouths. On river bars the water is often so shallow that ships cannot cross them even at high tide, unless a dredge to deepen the water is kept constantly working.

17. LAKES AND THEIR USES.

1. Sometimes a river, during its course, flows into a great hollow in the land. This it has to fill up with water before it can go any further, and a **lake** is formed. The river then proceeds onward, the lake being really a part of the river. Sometimes, owing to an earthquake, or to some other cause, the middle or the lower part of a valley becomes blocked up with rocks and earth which form a kind of dam across the valley. The river flowing through the upper part of the valley, aided by other streams from its sloping

sides, fills up the hollow thus formed, until the water so collected rises high enough to overflow the dam or barrier, and forms another kind of lake.

A lake is thus a body of water, often of considerable area, wholly surrounded by land except where a river enters or leaves it.

2. Lakes are useful in various ways. They store water, and so not only tend to prevent floods in a river basin, but also help to keep the river flowing steadily at all seasons of the year. Many lakes provide an easy method of carriage for people and goods by means of ships, while their shores often possess advantages of position that cause towns to grow up there, as at Rotorua and Queenstown. (See pages 78 and 87.) Their waters help to make the climate of the surrounding country a little cooler in summer and a little warmer in winter than it would otherwise be, as will be more fully explained later on. They often contain plenty of fish which, when caught, furnish a supply of excellent food for many people. Many towns, too, are furnished with a bountiful supply of good water from lakes; which therefore become natural reservoirs or storehouses of water. From others, such as Lake Coleridge in Canterbury, power is obtained to generate electricity that is used to light up cities or towns, or to drive machinery used in manufacturing various kinds of goods. Some lakes are surrounded by beautiful scenery which tourists come to view.

3. As streams are constantly flowing into lakes, depositing sediment along their shores and bottoms, some of them are in time filled up with the finest of earth and soil, through which the streams cut channels to escape. Fertile plains are thus formed, which grow splendid crops of grain and other produce useful to man.

4. New Zealand is well supplied with lakes, and these are of several different kinds. The chief kinds are (1) the hot lakes (**Rotomahana**, and a number of small lakes*) of volcanic origin, in Auckland, south of the Bay of Plenty; (2) the large cold lakes, like **Taupo**, in the heart of the North Island, and the group of alpine lakes in South Canterbury and Otago (Tekapo, Pukaki, Ohau, Hawea, Wanaka, Wakatipu, Manapouri, Te Anau); and (3) coastal lagoons, such as Lakes **Ellesmere** and **Wairarapa**, which are fed by rivers, but which, being separated from the sea by a narrow barrier of shifting shingle through which a breach is often made, are always more or less salt.

18. THE PHASES OF THE MOON.

1. The sun is a luminous, or light-giving body. It glows with its own heat, as a red-hot piece of iron glows. It always appears to be of the same size, shape, and brightness, except when some other object, such as a cloud, helps to hide it partially from our view. Clouds sometimes prevent us from seeing it in all its glory, although they do not altogether keep its light from us. When the clouds pass away, it shines as brightly as ever.

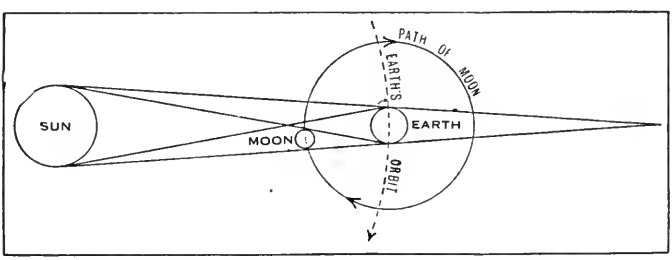
2. The moon, however, is a cold, dark body, like the earth, or like a ball of cold iron, and sends out no light of its own. The light that we see on it is simply the light from the sun shining on its surface, and reflected back to us like the sunlight from the distant hills. When the moon crosses directly between us and the sun we have what is called an **eclipse** of the sun. Then, if we look at the sun through a piece of smoked glass, the dark body of the moon can be plainly seen on the sun's face.

3. Unlike the sun, the moon does not always appear to be of the same shape and size. Sometimes

*Not Rotorua, Rotoiti, or Tarawera, which are cold.

it appears as a full moon, sometimes as a crescent, and again as a half-moon.

4. As the moon, like other dark bodies, can reflect light, the bright portion of it that we can see plainly is a part of the bright side of it on which the sun is shining. At full moon we can see the whole of this bright side; at other times we can see only a part of it; at other times again we cannot see any part of the bright side of the moon.



Eclipse of the sun. The moon is passing between the earth and the sun

5. When the moon cannot be seen from the earth there is said to be no moon. This happens when the moon comes between the sun and the earth, and its dark side is therefore turned towards us. When the moon in its course has moved a little out of the straight line between the sun and the earth, we have what is commonly called the "new" moon, appearing like a wisp of silver thread in the sky. We then see just the edge of the moon that is lighted up by the sun.

6. This is the **crescent** moon, which appears to grow larger and larger every night until, (7¼ days after its first appearance) the moon seems to be semi-circular. We then call it a **half-moon.** For

7¼ days longer it goes on increasing until we see it as the **full moon**. It then gets smaller and smaller every night for another 14½ days, when it becomes invisible until we see it again as the "new" moon.

New moon (crescent)

7. The bright crescent of the moon is always on the side next to the sun. When the sun sets, the rest of the moon's face may be seen as a dim gray body. This is because that portion of it is in shadow.

8. During the first week of its appearance the crescent increases to a half moon and the moon is said to be in its **first quarter**. During the second week it appears as greater than a half moon, or "gibbous." At the end of that week it is a full moon, and is in its **second quarter**. It then becomes "gibbous" again, and at the end of the third week it is a half-moon again, and in its **third quarter**. For the next week it is crescent, always growing smaller and smaller, until it gradually disappears from sight, and then reappears as a "new" moon.

9. These changes through which the moon appears to go are called the **phases** of the moon. It takes 7¼ days for the moon to pass from one phase to another; 14½ days for it to pass from new moon to full moon; or 4 times 7¼ = 29 days for it to pass from new moon to new moon, or from full moon to full moon. This time—29 days, or, more correctly, 29½ days—is called a **lunar month**. It is rather more than two days

longer than the time actually taken by the moon in going round the earth.

19. HIGH TIDE AND LOW TIDE.

1. Children who live near the sea-shore will no doubt have noticed that sometimes the water is close up to the rocks and cliffs; and that at other times there is a wide strip of wet shingle and sand between the edge

High Tide at Sumner, near Christchurch.

of the sea and the rocks or sand-hills. If they watch the beach and the sea closely for a few days, they will observe that the alternate coming in and going out of the water (which is called the rising and falling or the flowing and ebbing of the tide) happens regularly twice every day, although not at exactly the same time each day.

2. When the water is creeping up the beach towards the cliffs or sand-hills, the tide is said to be coming in, or **flowing**. When the water is creeping back again away from the land, the tide is said to be going out, or **ebbing**.

3. **High** tide occurs when the flowing water has reached its highest point. This is also called full tide, or **flood** tide. As soon as the tide is full it almost immediately begins to go back from the land again. It is then ebbing, and continues to recede until it has reached its lowest point. When this occurs we have **low** tide, or **ebb** tide.

4. For a very short time at flood-tide, and at ebb-tide, the water seems to be quite still, that is, it is neither coming in nor going out. The tide is then just about to turn; and to begin either ebbing or flowing, as the case may be. This period of apparent rest, when the water seems to be neither ebbing nor flowing is called slack water, or **slack** tide.

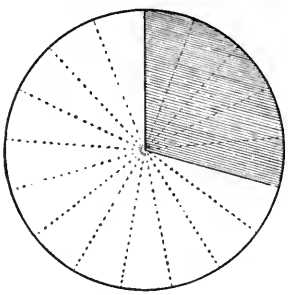
20. THE SURFACE OF THE EARTH.

1. The portion of the earth that we can see, or walk across, or sail over, is called its surface. It consists of pieces of land and water of many different shapes and sizes. Beneath the surface is the rest of the great solid body of the earth, the cracks and hollows in which may be either wholly or partly filled up by the waters of the oceans, seas, and lakes.

2. If a person were to travel all round the earth in an air-ship or aeroplane, he would see beneath him, throughout the journey, more water than land.* In fact there is more than twice as much water as there is land on the surface of the earth; so that if all the water could be collected together in one place so as to show the same amount of surface as it does now

*An easy and useful series of exercises would be for the children at this stage to make rough models in clay or plasticene of the picture of the land and water divisions on page 46, showing islands mountains, straits, etc.

in scattered parts, and the surface of all the land were similarly placed, it would be seen (as shown in the diagram below) that 12 parts out of 17 of the surface would consist of water, and the remaining 5 parts of the surface would be solid land.



Land and water on the globe

3. As it is, however, the different pieces of land and water, which are of many different shapes and sizes, are scattered all over the earth's surface; so that, in one part may be seen large masses of land, in another large masses of water; while in still other portions of it occur great numbers of large and of small pieces of land and water all mingled together.

4. In order that we may be able to talk about these different portions of land and water more conveniently, different names have been given to them. It is important, therefore, that we should know what is meant by these different names when we hear them spoken of, or when we read about them in a book or a newspaper. We sometimes speak about them as the divisions of the land, and the divisions of the water; or simply and shortly as **land divisions*** and **water divisions.**

21. ELEMENTARY GEOGRAPHICAL NOTIONS.

1. DIVISIONS OF THE LAND.

1. Open your eyes almost anywhere in New Zealand, and you will see high lands and low lands, and sea-bordered land.

*Or land forms.

1. High Lands.

1. The **high land** is rough and wrinkled with ridges and hollows. If the ridges are not raised very high above the surrounding country, they are called **hills**; and if there are many of them, the portion of the country where they occur is said to be **hilly**. If the ridges are very high, they are called mountains; and if there are many of them, the portion of the country where they are is said to be **mountainous.**

New Zealand is, on the whole, a mountainous country, because much of its surface is wrinkled with high mountains. Indeed, several of its largest towns are built partly on hills, for example Auckland, Napier, Wellington, Nelson, Timaru, and Dunedin.

1. *Hills and Mountains.*

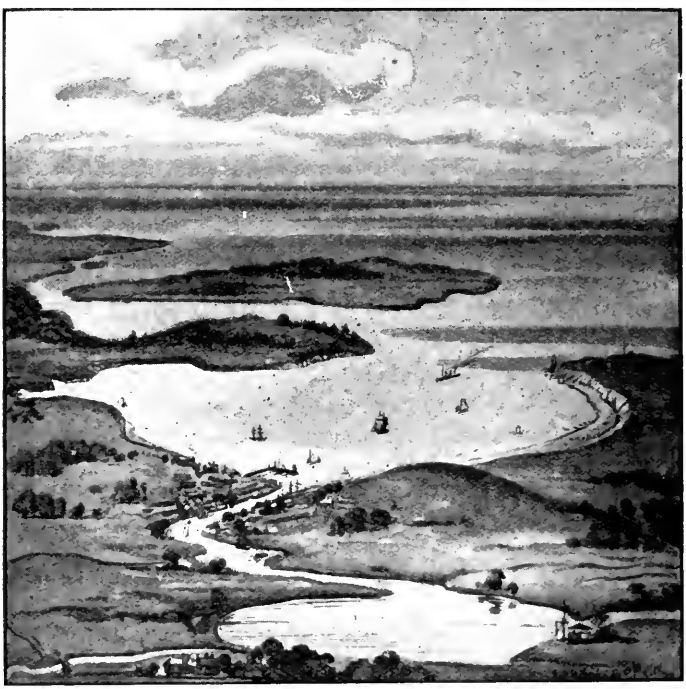
1. A **hill**, then, is a piece of land of moderate height. A **mountain** is a very high piece of land. In some places these occur as single **peaks** rising above the lower land around them. Such is **Mount Egmont** in Taranaki. In other places they appear in long lines with many rounded or jagged **peaks. They are then called ranges of hills or mountains.**

2. When several ranges are joined together, or are very close to one another, they form **chains** of hills or mountains. Country that rises and falls in waves is called **downs.** These are usually found near the foot of higher ranges.

(1) The **Kaikouras**, in Marlborough, form two ranges of mountains, called the **Inland Kaikouras** and the **Seaward Kaikouras**, running parallel with each other and the coast.

(2) The **Southern Alps**, between Canterbury and Westland, form the Central portion of a long mountain chain, stretching, under different names, from the northern coast of Marlborough and Nelson to the Southern Coast of Otago. **Mt. Cook**, of the central mountain chain, is the highest mountain in New Zealand.

(3) Most of the useful minerals, such as coal, gold, silver, iron, lead, etc., are found largely in mountainous regions. This is because they are thrown towards the surface when the mountains are formed, and, after a time, weathering may expose them to view. In New Zealand the only minerals of value are coal, gold, and silver. A little copper is mined; but iron, though found, has proved too costly to smelt.



Picture of land and water divisions

2. *Old and Young Hills.*

1. Hills or mountains that have tolerably smooth and rounded tops, and long, smoothly-sloping sides, were formed perhaps many millions of years ago, and are known as old hills or mountains. They

have been worn smooth by the action of flowing water, frost, and the weather generally; and this has taken a very long time to do.

2. Those that have sharp, jagged peaks, and steep or deeply-rutted sides, were formed perhaps only

Map of land and water divisions

hundreds of thousands of years ago, or less, and are known as **young** hills or mountains. The weather has not yet had time to wear them away into smooth rounded surfaces, nor have flowing water, ice, and frost had time to scoop out **great hollows or deep ruts in them.**

3. *Old and Young Plateaus.*

1. Flat-topped pieces of high land, or high lands that have large pieces of fairly level land on them are called **plateaus**, or **tablelands**.

(1) There is a plateau in the Auckland Province, north of Lake Taupo. A very large plateau stretches across the middle and west of Australia.

(2) **Table Mountain**, in South Africa, overlooking Table Bay, is so called because it has a flat top, like a table, over

N.Z. Govt. Tourist Dept.

Part of Volcanic Plateau, where Waikato River enters Lake Taupo

the edges of which the white mist or fog sometimes hangs down like the over-lapping ends of a table-cloth.

(3) On his journey towards the South Pole, Sir Ernest Shackleton and his men had to climb and then cross a vast table-land raised some 10,000 feet above sea-level.

2. The surface of **old plateaus** is scarred with ruts and wrinkles. These tablelands were formed countless ages ago, and are crossed by valleys slowly cut into them by the flowing water of creeks and rivers, aided by the action of frost. **Young plateaus** have tolerably smooth, unbroken surfaces, as they were formed or raised not so very long ago, that is, perhaps only a few thousand years ago.

4. *Volcanoes.*

1. A hill or mountain, or even a flat piece of land, out of which steam, ash, melted rock, or liquid mud sometimes issues, or used to issue long ago, is called **a volcano.**

2. More correctly, it is the hole, chimney, or vent in the earth, through which the steam, ash, and liquid matter comes, that is the volcano. The raised or rounded rim at the top, that has been formed round this hole by the cooling and hardening of the liquid rock and ashes there, is called the **crater.**

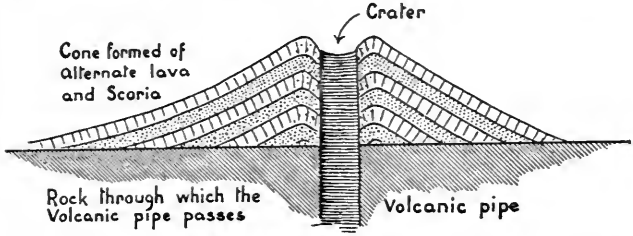


Diagram of the crater of a volcano.

A volcano from which only hot, scalding water (sometimes mixed with mud and stones) issues is known as **a geyser.***

(1) A volcano from which visible steam almost continuously pours, such as **Mt. Ngauruhoe** in Wellington, is said to be an **active volcano.** When hot ashes and liquid rock come from it, and run down its sides, it is said to be in a state of **eruption.** If it is active only occasionally, and the steam issues from it at intervals only, it is then called an **intermittent** volcano. An **extinct** volcano is one that was once active, but from which no steam or liquid lava has issued within historical times. **Mt. Egmont,** in Taranaki, is an extinct volcano.

(2) Sometimes it has happened that a volcano that was thought to be extinct has suddenly burst into activity. Instead of being extinct, however, it was merely dormant or sleeping. This happened in the case of **Mt. Tarawera** in

*Pronounce *gy'zer.*

the North Island, which up to the year 1886 was thought to be extinct. In that year, however, the mountain burst into violent activity; and the hot ashes and lava ejected from it covered up and destroyed the Pink and the

Waimangu Geyser (Active from 1901 to 1905, and again in 1917)

White Terraces, and other beauty spots. A somewhat similar change also happened in the case of **Mount Vesuvius** in Italy. Up to the year 79 A.D. Vesuvius was not known to be a volcano. In that year, however, the mountain burst out in eruption, the lava and ashes from it covering up the two cities of Herculaneum and Pompeii, so completely, that even their position was not exactly known until centuries after

wards, when by very great labour in digging their ruins were laid open.

2. Low Lands.

1. The lower lands running through or lying near hills or mountains are known as **valleys, plains,** and **basins.**

(1) Valleys are hollows, or pieces of sloping land, lying between mountains or hills. At their lower ends they

Mt. Ngauruhoe

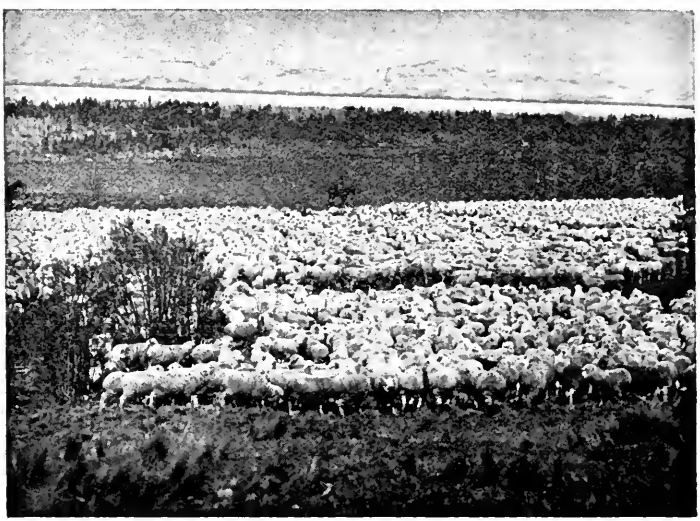
generally open out into broader pieces of flat land called **plains,** across which rivers draining the valleys find their way to the sea. The flat pieces of land usually forming the banks of a river are known as **river-plains;** and the level land formed by some rivers near their mouths, and through which they flow in several streams, is (as we have already seen) called a **delta.**

(2) A plain that is surrounded by higher land, such as a fringe of hills or mountains, is known as a **basin.** When dry the floor of a basin is a plain. The Hanmer Plain is such a basin. When a basin is partly filled with water it

forms a lake, or sea. The largest basins in the world are those filled by the oceans. A river-basin is the part of a country drained by a river and its tributaries.

3. Coasts or Shores.

1. The portion of land bordering on the sea is known as a **coast** or **shore.** In some places the coast is flat, ending in sandy or gravelly beaches. In other



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Mob of Sheep on Hanmer Plains
(These tussock-covered plains are 1,200 feet above sea level, and are surrounded by mountains from 3,000 to 6,000 ft. high)

places it is high and rocky, ending in steep cliffs against which the water beats far below. At the foot of the cliffs are sometimes short strips of pebbly or boulder beaches.

The portions of the shore that jut out into the sea are known as capes, headlands, promontories, or bluffs. Most of these really consist of mountain spurs which come down to the sea and so help to shape the coast-lines of a country. A study of the relief maps at the end of this book will serve to make this plain. Cape Farewell, and

Farewell Spit, in Nelson, form the northern end of the Tasman Mountains; while Golden Bay is really a continuation of the valley between the Tasman Range and the Marine Mountains. The Marlborough Sounds are valleys that the sea has flowed into. The West Coast Sounds of Otago are, probably, of similar formation. Akaroa and Auckland Peninsulas are highlands indented by drowned or submerged valleys.

4. Islands and Peninsulas.

1. Often, near the shore, but sometimes far away from it, may be seen pieces of land wholly surrounded by water. These are **islands**. Sometimes a piece of land has water nearly all round it, being joined to the inner shore by a narrow neck of land. Such a piece of land is called a **peninsula**; and the narrow neck joining it to the mainland is called an **isthmus**.

(1) Many islands are merely the tops of high pieces of land that have been raised up, or have been cut off from a larger piece, and surrounded by the sea. High peninsulas often have islands near them that have been formed in this way. An instance of this is the island of **Ceylon** at the foot of the great peninsula of India.

(2) The more prominent peninsulas of New Zealand are **Auckland Peninsula, Coromandel Peninsula, Banks Peninsula,** and **Otago Peninsula.**

5. Continents.

1. Very large pieces of land are called **continents** There are altogether seven of these; namely,

1. **Europe.**
2. **Asia.**
3. **Africa.**
4. **North America.**
5. **South America.**
6. **Australia.**
7. **Antarctica.**

2. **Europe, Asia and Africa** form the largest mass of continuous land on the earth's surface. This large land mass is sometimes called the **Old World,** for the reason that it has been known to civilised

man, and has had a written history, for a longer time than the other continents. The great peninsula of Africa is now separated from Asia by the **Suez Canal.** (See page 57).

3. **North** and **South America** are two long peninsulas, joined together by the **Isthmus of Panama**, through which the Panama Canal is cut. They are sometimes called the **New World**, because they were not known to most of the people of Europe until their re-discovery by Columbus in 1492.

4. **Australia** is the large island-continent lying to the south-east of Asia. It was not known to the people of Europe until different portions of it were discovered by various navigators in the 16th, 17th, and 18th centuries. The best known and most important of these navigators was **Captain Cook**, who discovered the east coast of the continent, and named several parts of it.

5. **Antarctica** is the name given to the large mass of snow- and ice-covered land round the South Pole.

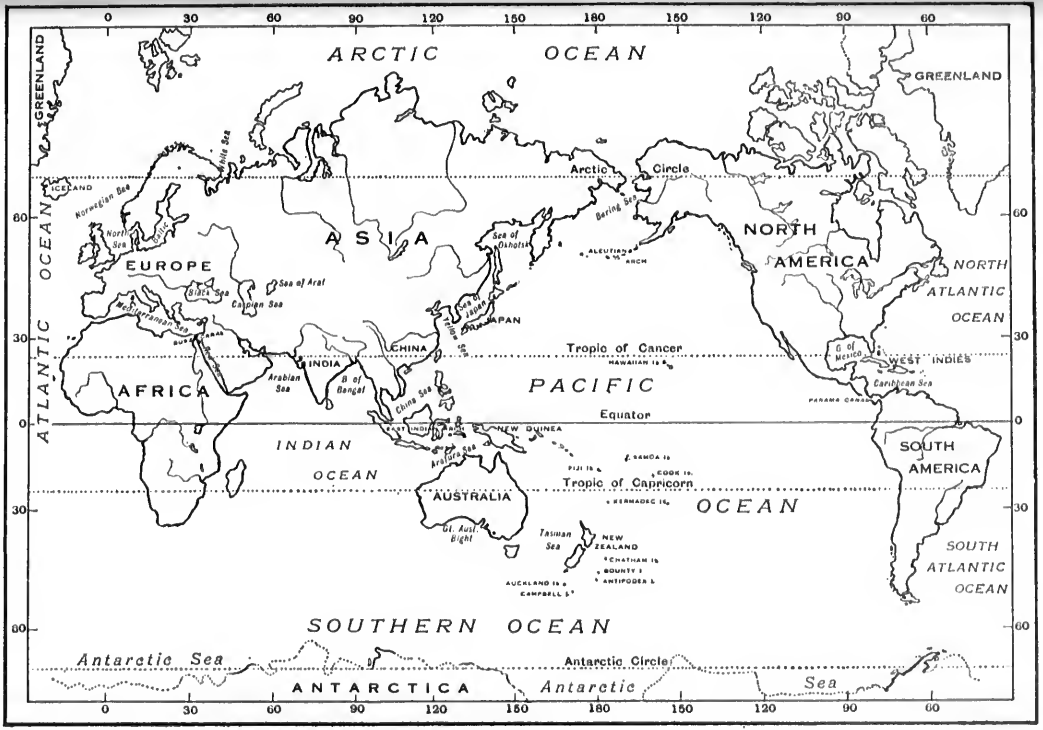
6. All the continents, except Australia and Antarctica, are divided into different **countries**; that is, into separate territories, under different governments.

2. WATER DIVISIONS.

1. The immense sheet of salt water that surrounds all the great land masses of the earth is partly broken up into sections (but not actually into quite separate portions) of different shapes and sizes by the forms of the intervening land.

1. Oceans.

1. The largest divisions of salt water on the earth are called **oceans.** It is from the oceans, as we have already seen, that nearly all the vapour comes which



Map of the World

helps to form the clouds, and which returns to the earth again in the form of rain, hail, and snow. Without the oceans there would be no fresh water, nor indeed water or moisture of any kind, upon the earth. It is across the oceans, too, that ships carry people and produce from one part of the world to another. They are therefore the great highways of trade and commerce.

2. There are altogether five oceans, namely,

1. **The Pacific Ocean.** 3. **The Indian Ocean.**
2. **The Atlantic Ocean.** 4. **The Southern Ocean.**
5. **The Arctic Ocean.**

(1) The largest of the oceans is the island-dotted **Pacific**, which separates North and South America on the one side from Asia and Australia on the other. Owing to its vast size, the many rich and populous countries whose coasts it washes, and its numerous islands, it is rapidly becoming the greatest ocean highway of the world's commerce. Now that the **Panama Canal** is finished, ships from the shores of the Pacific are able to proceed by a short route to and from the rich trading countries of Eastern America and Western Europe.

(2) The **Atlantic Ocean**, which has hitherto been the great trading waterway of the world, stretches from the eastern coasts of North and South America to the western shores of Europe and Africa.

(3) The **Indian Ocean** washes the southern coast of **Asia**, the eastern coast of Africa, and the northern and western shores of Australia. Ships sailing to Europe through the **Suez Canal** from Australia and New Zealand have to cross the Indian Ocean.

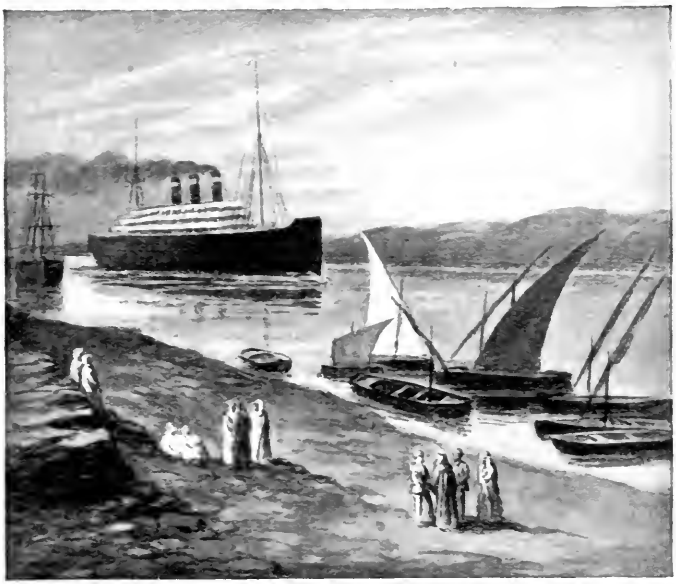
(4) The great piece of water lying south of America, Africa, Australia and New Zealand, is called the **Southern Ocean**. The southernmost portion of it that washes the land round the South Pole is now usually called the **Antarctic Sea**.

(5) The **Arctic Ocean** lies round the North Pole, and touches the northern shores of Europe, Asia, and North America.

2. Seas.

1. If of considerable size, the portion of an ocean that is partly shut in by the land, or that lies between different pieces of land, is usually called a sea.

The positions of the larger Seas, and of the ocean of which they form parts, may be most readily learned from the Map of the World. The part of the Pacific Ocean that washes the west coast of New Zealand and separates these islands from Australia is called the Tasman Sea.



Suez Canal

The principal seas shown on the map of the world (p. 55) are as follows:—

1. **Tasman Sea.**
2. **Arafura Sea.**
3. **Bering Sea.**
4. **Sea of Okhotsk.**
5. **Yellow Sea.**
6. **Sea of Japan.**
7. **Arabian Sea.**
8. **Red Sea.**
9. **North Sea.**
10. **Norwegian Sea.**
11. **Mediterranean Sea.**
12. **Black Sea.**
13. **White Sea.**
14. **The Antarctic Sea.**

3. Inland Seas.

1. A large inland sheet of salt water is sometimes called a sea, although it does not form part of an ocean. Such are the **Caspian Sea**, which is wholly surrounded by portions of Europe and Asia; and the **Sea of Aral**, in Central Asia.

4. Archipelagoes.

1. A sea dotted over with groups or clusters of islands is called an **archipelago**.

(1) The **East Indian Archipelago** includes many large and small islands lying between Australia and Asia.

(2) The **Grecian Archipelago** lies east of Greece in a part of the Mediterranean Sea.

(3) The islands of the **Aleutian Archipelago** help to enclose the Bering Sea.

5. Bays, Gulf, and Straits.

1. A **bay** is a portion of water curving widely into the land.

(1) Such are the **Bay of Plenty**, North of Auckland; the **Bay of Biscay**, west of France; **Hudson Bay**, and **Baffin's Bay**, in North America.

(2) A wider bend of the sea is called a **Bight**. **Canterbury Bight** is formed by the bulging out of Akaroa Peninsula, and that of the land near the Waitaki River in the South. The wide bend in the south coast of Australia is called the **Great Australian Bight**.

2. A **gulf** has a much narrower entrance than a bay, and makes a deeper indentation in the land.

The entrance to **Hauraki Gulf**, in the north of Auckland, is partly blocked by the Barrier Islands. The **Gulf of Carpentaria**, in Australia; the **Gulf of Guinea**, in Africa; the **Gulf of Mexico**, in North America; and the **Gulfs of Finland** and **Bothnia**, in the Baltic Sea in Europe, are other examples of gulfs.

3. A **strait** is a narrow passage of water connecting two larger portions, and separating the land on either side.

Cook Strait separates the North and South Islands of New Zealand. **Foveaux Strait** separates Stewart Island from the South Island. **Bass Strait** lies between Tasmania and Victoria, and **Torres Strait** separates Northern Queensland from the large island of New Guinea. One of the most important straits in the world is the **Strait of Gibraltar**, which connects the Mediterranean Sea with the Atlantic Ocean.

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Queenstown, Lake Wakatipu

6. Lakes, Rivers, and Canals.

1. A **lake**, as we have already seen, is a portion of water wholly surrounded by land; and a **river** is a stream of water flowing from higher land towards an ocean, sea, lake, or swamp.

Lake Taupo in the North Island, is the largest lake in New Zealand. The **Alpine Lakes** of Canterbury and Otago (namely **Tekapo, Pukaki, Ohau; Hawea, Wanaka, Wakatipu, Te Anau** and **Manapouri**) are much admired for the beauty of their scenery.

2. A **canal** is a waterway that man has made through a part of a country to enable people or goods to be carried easily and cheaply. There are many such canals in Europe and in North America.

(1) Through the **Suez Canal**, now separating Africa from Asia, the very largest steamships may carry their passengers and cargoes from Great Britain to India, Australia, and New Zealand by a much shorter sea-route than that round the Cape of Good Hope.

(2) The **Panama Canal**, which separates North America and South America, still further shortens the distance between England and New Zealand, and should make both travelling and the carriage of goods from New Zealand to eastern America and western Europe easier and cheaper than they used to be.

(3) The Sumner to Christchurch Canal, if carried out, would make Christchurch a canal-port, and probably cheapen the cost of its over-sea merchandise.

PART II.—SOCIAL AND COMMERCIAL GEOGRAPHY.

I. THE DOMINION OF NEW ZEALAND.

1. General Description.

1. The **Dominion of New Zealand**, which is separated by the Tasman Sea from Australia, 1200 miles away, consists of three main islands—the **North Island**, the **South Island**, and **Stewart Island**—as well as of several groups of smaller **outlying** islands situated in the Southern and Pacific Oceans. The chief of these are the Cook Islands, of which Rarotonga is the largest, annexed in 1901. Under the Peace Treaty of 1920, New Zealand has a

mandate over what was lately German **Samoa**. That is, it governs Western Samoa according to British law, subject to the approval of the League of Nations. Western Samoa is, therefore, now practically a part of our Dominion.

2. New Zealand forms an important part of the great British Empire; and its people, who number

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Mt. Tongariro (6,458 ft.) from Lake Rotoaira

over a million and a quarter persons, are mainly of British stock. About 64,000 of them, however, are Maoris, descendants of the warlike native race that lived in the country before it was visited by Europeans.

3. New Zealand is mainly a **mountainous** country, although there are many large **plains** in both the larger islands. There are several **volcanoes** in the North Island; where, too, is the famous **Thermal**

Springs District, with its hot springs, boiling lakes, wonderful geysers, and other marvellous natural objects. The South Island is noted particularly for its lofty, snow-capped mountains, its magnificent glaciers, its alpine lakes, and the deep sounds, or fiords, of its south-western and northern shores.

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Mt. Ruapehu (9,175 ft.)

4. Its almost countless streams and rivers, and its abundant rains, together with its genial climate and good soil, make New Zealand a well-watered and fertile country.

2. Mountains.*

1. The **Main Chain** of mountains in the North Island, forming the chief watershed, runs parallel to the east coast, and stretches, under various names, from the south of Wellington to near East Cape in Auckland.

*See maps on pages 95 and 96

2. In the centre of the island, round about Lake Taupo, is a large plateau, forming a branching watershed, from which rise the volcanic peaks of **Tongariro, Ngauruhoe,** and **Ruapehu.** West of this plateau stretches a vast plain, until recently almost entirely covered with forest, from the coastal bluff of which rises the cone-shaped **Mount Egmont.**

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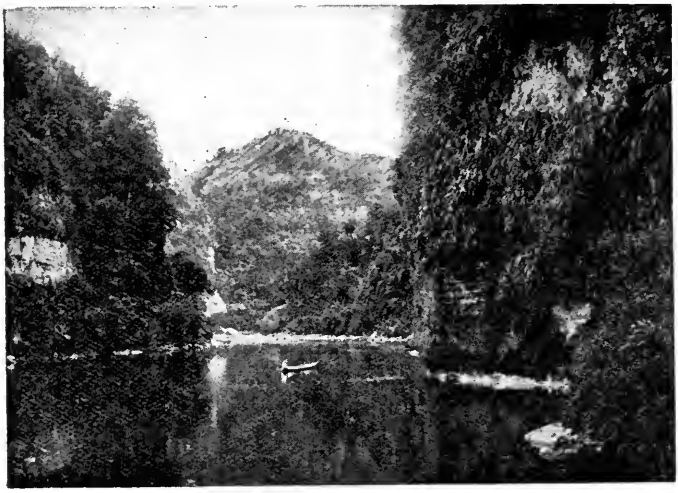
Mt. Egmont (8,250 ft), Taranaki

3. In the South Island the **main chain** of mountains, or principal watershed, running nearly parallel to the east and west coasts, stretches from the Southern Ocean to Cook Strait. The **St. Arnaud Mountains**, between Marlborough and Nelson, form the northern end of the chain. The **Southern Alps**, the highest peak of which is **Mount Cook**, form the middle portion of the chain, and separate the Canterbury Plains from the coastal plain of Westland. The southern portion of the main chain fringes away into the broken mountains of Otago.

(1) **Mt. Cook** (12,350 feet) the highest mountain in New Zealand and Australia, lies almost due west of Christchurch. On account of the glaciers and other mountain scenery in its vicinity, it is visited by many tourists.

(2) Other mountain peaks of the Southern Alps, that are 10,000 feet high or upward, are **Mt. Tasman, Mt. Sefton,** and **Mt. Aspiring.** At Arthur's Pass, a tunnel, 5½ miles long, pierces the Southern Alps, emerging at Otira. Through it a railway runs which connects the towns of Westland and Canterbury, thus enabling the



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On the Wanganui River

produce of these districts to be more quickly and more cheaply interchanged.

(3) **Mt. Ruapehu** (9,175 feet) is the highest mountain in the North Island. It is an intermittent, or occasionally active volcano, the top of which is covered with perpetual snow. In its crater, in the midst of ice and snow, is a boiling lake. A little to the north of Ruapehu are the active volcanoes of **Ngauruhoe** and **Tongariro.**

(4) **Mt. Egmont** (8,250 feet) is the only mountain of importance in Taranaki. It was discovered and named by Captain Cook early in 1770. Its conical snow-capped

peak is visible for many miles in all directions. It is an extinct volcano standing in solitary grandeur in the centre of the rounded promontory of which Cape Egmont is the western point.

3. Rivers.

1. Owing to the fact that the main mountain chains of both islands run parallel to the long eastern and western coasts, New Zealand has no rivers of any very great length. Few even of the larger rivers are navigable, except by light vessels, for many miles from their mouths.

In the North Island, the main watershed, being near the east coast, the rivers from its eastern slopes are comparatively short. The long western slope, however, is broken by the great central plateau near Lake Taupo, which causes the chief rivers to radiate from the plateau in a northerly, southerly, and westerly direction respectively.

In the South Island, the principal watershed formed by the Southern Alps forms a short and somewhat steep western slope towards the Tasman Sea, and a longer and more gradual slope to the eastern coast. The rivers reaching the Tasman Sea are therefore for the most part short and rapid, with a general westerly direction; while those of the eastern slope, such as those of Canterbury and Northern Otago, are longer and less rapid. Most of the chief rivers of Otago, however, rising as they do in the high lands where the great lakes are situated, have a general southerly direction and are of considerable length.

2. The principal rivers of the North Island are the **Waikato** and the **Wanganui**. Those of the South Island are the **Clutha** and the **Waitaki.**

(1) The **Waikato*** (Running Water) is the longest river in New Zealand, and is navigable by small steamers for about 100 miles from its mouth. It rises in the north-eastern slopes of Mt. Ruapehu, flows through Lake Taupo, and then bends in a north-westerly direction through Auckland until it enters the Tasman Sea. Along its banks were scattered many of the Maori strongholds during the Waikato War, where many battles were fought between the Maoris on the one hand, and the British and Colonial troops on the other.

*See picture on page 48

(2) The **Wanganui**, from the western slopes of Ruapehu and Ngauruhoe, flows into the Ocean through bush country and dairying land in Wellington. It is navigable by light steamers, and then by boats and canoes, for about 140 miles from its mouth. From the beauty of its river scenery, as well as for the places of historic interest that occur along its banks, it has been called the "Rhine" of New Zealand.

(3) The **Clutha** is the largest river of New Zealand, and carries down to the sea every day a very large amount of water. Although it is about 150 miles long, it is navigable for only about 40 miles by small river-steamers. It flows from the large lakes of north-central Otago (Hawea, Wanaka, and Wakatipu), and the wide snow-covered region surrounding them, in a southerly direction to the Pacific near Nugget Point.

The Clutha flows through one of the richest gold-bearing districts of the Dominion. Along its course are many dredges, engaged in removing the gold from its bed and banks.

(4) The **Waitaki** is the third largest river of New Zealand. It rises on the eastern slopes of the Southern Alps, and, after draining the surplus waters of Lakes Tekapo, Pukaki, and Ohau, flows in a southerly, and then in an easterly, course between Otago and Canterbury to the Pacific.

4. Occupations of the People.

1. The people of New Zealand are mainly engaged in **pastoral** and **agricultural** pursuits, or in occupations connected with these. That is to say, the bulk of them are chiefly employed in rearing sheep, and other live stock; in working on farms; and in selling the **wool**, **frozen meat**, **grain**, and other produce which is obtained from the land, or from the stock reared upon it.

2. The bountiful rains and rich pastures of New Zealand make it an excellent **dairying** country, so that many of its people are engaged in producing quantities of **butter** and **cheese**, much of which they send across the seas to England and other places.

3. There are many extensive and valuable **forests** in the Dominion, from which its people obtain large supplies of useful timber. The **kauri** forests of Auckland furnish some of the finest timber in the world for general building purposes, for the making

Carcases of frozen meat in cool chamber

of furniture, and for shipbuilding. Red pine (rimu), black pine (matai), white pine (kahikatea), totara and other valuable kinds of wood also extensively occur, particularly in the Auckland and Wellington provinces of the North Island, and in the Nelson, Westland, and Southland districts of the South Island.

4. New Zealand is also a **mining** country, and produces considerable quantities of gold, coal, and other valuable mineral products. **Gold** and **coal** are found principally in Otago, Westland, Nelson, and Auckland. Many people, too, are employed in digging for the **kauri gum** that is found in the gum-fields of Northern Auckland.

Most of the gum now obtained is small, and is got by washing and riddling the soil of kauri-peat swamps.

Bringing milk to butter factory

5. A considerable number of the people of New Zealand are engaged in manufacturing industries. The Dominion, with its large coal-fields, its great water-power that can be easily converted into electric power, as at Lake Coleridge in Canterbury, and the wealth and variety of its natural products, is well fitted to become an important manufacturing country. Already it has woollen mills, butter and cheese factories, foundries, cement works, clothing and boot factories, soap and candle factories, woodware works, flax mills, freezing works, jam factories, and carries on many minor manufacturing industries.

5. The Climate of New Zealand in Relation to its Productions.

1. The chief causes determining the climate of New Zealand are briefly:—

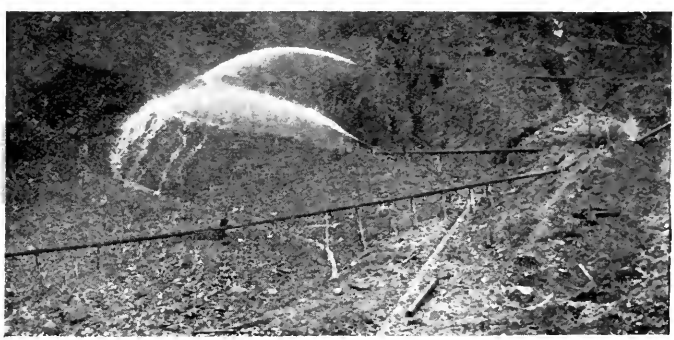
(*a*) *Nearness to or distance from the Equator.* The far north is much warmer than the far south. Generally speaking, the climate becomes cooler and cooler as we go from north to south.

Timber at Aoroa Sawmill, North Auckland

(*b*) *Height above sea-level.* High lands are usually colder than lowlands. As New Zealand is very mountainous, and the high lands are well distributed, different districts vary considerably in temperature, owing to this cause.

(*c*) *Insular position.* The presence of a great expanse of ocean surrounding New Zealand tends to prevent extremes of temperature. This will be explained later.

(*d*) *Direction and nature of prevailing winds.* The westerly winds which frequently blow carry moisture from the Tasman Sea, and this is turned into rain or snow by the mountain chains running parallel to the coast in both islands. Hence, the west is both wetter and warmer than the east. In the North Island the mountain chain is nearer the east coast; in the South Island it is nearer the west. The result is that in the north the wider slope is on the west; in the latter it is on the east.



Gold-sluicing near Ross, Westland

2. The general effect of all these causes is to make the climate of New Zealand one of the finest and healthiest in the world. The summers are warm and pleasant, and the winters are invigorating, but not cold. Indeed, on the lower lands of the Dominion there is not a very great deal of difference between

the heat of summer and the cold of winter. Plenty of rain falls throughout the year over the whole country. Very dry seasons are, therefore, rare, while periods of drought are almost unknown. There is plenty of sunshine, too, almost every day, and so the soil is kept warm and sweet, and the farmer usually gets abundant crops.

N.Z. Govt. Tourist Dept

Drying New Zealand flax

3. It is the different conditions of temperature and moisture mentioned above that govern the distribution of plants and animals in the country. Thus, the warm rains from the Tasman Sea produce a rich growth of pasture on the western slopes of the Islands, making these districts, including Taranaki, the richest dairying country. In Taranaki and Westland, however, owing to this abundance of moisture, sheep do not thrive so well as in Hawke's Bay, Wellington,

Canterbury and Otago, where drier and cooler conditions produce a shorter pasture, both on the plains and on the mountains clear of bush.

4. Again, the moist climate of Southland, Westland, and portions of the North Island promotes the growth of timber, and it is consequently in those

N.Z. Govt. Tourist Dept.
Harvesting near Lake Hayes, Wakatipu

portions of the Dominion where the largest and most valuable forests occur, and where the timber industry is principally carried on.

5. Further examples of the control exercised by climate over production may easily be found. Thus, grapes and even oranges and lemons will grow in the warmer parts of Auckland but not so well further south. Hops grow well in Nelson, but not in Canterbury. Apples and stone fruits which do well in the Nelson district also thrive in Central Otago, which

has a very hot summer. As to grain crops, maize grows best in Auckland and other parts of the North Island, but is not grown as a farm crop far south of Cook Strait. Then, as we pass from north to south of the South Island the principal grains grown are: barley (in Marlborough), wheat and oats (in Canterbury and North Otago), and oats (in Otago and Southland). The dry warmth of Canterbury favours wheat production, while the wet and cool temperature of Southland favours the growth of oats more than that of wheat.

6. Historical.

1. New Zealand was discovered by Abel Tasman, a Dutch navigator, in 1642. It was then inhabited by tribes of intelligent and warlike natives, known as Maoris, who were skilful sailors and fishermen, and practical builders of forts and canoes, as well as tillers of the soil. New Zealand was not visited again, however, by Europeans until Captain Cook, the famous English sailor and discoverer, landed in 1769 at Poverty Bay, in the North Island, near where Gisborne now stands.

2. After this, the islands were frequently visited by whalers and traders; and later by missionaries, who established mission stations at the Bay of Islands and elsewhere.

3. In 1840 the first permanent white settlement was made at Wellington. Other settlements were soon made at Auckland, Akaroa, New Plymouth, Nelson, Otago, and Canterbury; New Zealand having in the meantime been declared a British colony.

4. On September 26th, 1907 (Dominion Day), New Zealand was, by Royal Proclamation, declared

to be a Dominion, and is now known as the **Dominion of New Zealand.***

Dominion Day is now kept on the fourth Monday in September every year.

7. Area and Population.

1. The Dominion of New Zealand includes a larger area than that of the island of Great Britain, although it is not quite so large as that of the United Kingdom. It contains over 105,000 square miles and its population exceeds 1,300,000 people.

8. Provincial Districts.

1. New Zealand is divided into nine **Provincial Districts**, four of which are in the North Island, and five in the South Island. Those in the North Island are **Auckland, Wellington, Hawke's Bay**, and **Taranaki**. The South Island districts are **Marlborough, Nelson, Westland, Canterbury**, and **Otago**. The boundaries of these provincial districts are those of the old provincial days, and differ from those now adopted by the Lands Department. See pages 77 and 81.

2. For purposes of local government the country is further divided into Counties, Road Districts, Boroughs, Town Districts, Education Districts, etc.†

9. Seat of Government.

Wellington, on Wellington Harbour, Cook Strait, is the capital of New Zealand; that is, it is the place where Parliament meets to make the laws, and where the Governor-General of New Zealand usually lives.

* See also pages 60-61 as to Samoa and the Cook Islands.
† See Mulgan's "The New Zealand Citizen."

10. Cities.

1. In New Zealand the towns that have more than thirty thousand inhabitants are called **cities**. There are four of these in the Dominion, namely **Auckland**, **Wellington**, **Christchurch**, and **Dunedin**. When their suburbs are included, these cities are sometimes called Greater Auckland, Greater Wellington, Greater Christchurch, and Greater Dunedin.

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Auckland, from Mt. Victoria

2. Their population, including that of all their suburbs, is as follows:—

Auckland	....	....	....	202,000
Wellington	....	....	....	127,000
Christchurch	....	....	....	122,000
Dunedin	....	....	....	83,000

11. Chief Ports.

1. The chief ports of New Zealand are **Auckland**, **Wellington**, **Dunedin**, **Port Chalmers** (2,600), **Lyttelton** (3,700), **Napier** (18,600), **Timaru** (17,000), and the **Bluff** (1,600). **Invercargill** (22,500), the chief town of Southland, is also a port for smaller shipping.

2. Other leading ports are **Gisborne** (15,000) **Thames** (4,700), **Onehunga** (10,800), **New Plymouth** (16,700), **Wanganui** (27,000), in the North Island; and **Oamaru** (7,200), **Greymouth** (5,800), **Westport** (3,800), **Nelson** (12,000), and **Picton** (1,300), in the South Island.

12. Chief Towns of the North Island.*

Auckland Province.

1. **Auckland** (202,000), on Auckland, or Waitemata, Harbour, is the chief town and port of the province, as well as the largest city in New Zealand. Its western port, **Onehunga**, on Manukau Harbour, eight miles distant by rail, has a woollen factory, and a large trade in kauri timber.

2. **Waihi** (3,700), the largest gold-mining centre in New Zealand, is connected by rail with **Paeroa** (1,800), another gold-mining town, and with **Thames** (4,700), where the gold is about worked out. The latter is also an important port on the Firth of Thames, having steam and rail

*The number of towns given under this, and the succeeding heading, is considerably larger than is usually necessary for S. 3. They have been inserted with the sole object of giving the teacher as wide a choice as possible in his selection of the towns he may deem most suitable, or most applicable, to the conditions (*e.g.* industries etc.) of his particular school or provincial district. Thus Westland children should be expected to know more about Westland than about Otago, Auckland or the other Provinces.

The populations (given in brackets) of the 4 cities and 9 other chief towns of New Zealand include those of the suburbs.

Map of North Island, showing provincial districts and towns

communication with Auckland. **Te Aroha** (2,300), also on the Thames, is a farming centre, but is better known for its hot springs and Government Sanatorium, which makes it one of the chief health resorts of the North Island.

3. **Gisborne** (15,000), an important port on Poverty Bay, exports grain, wool, frozen meat, and dairy produce. Near this place Captain Cook made his first landing in New Zealand in 1769.

4. **Whangarei** (6,700), on Whangarei Harbour, exports timber, coal, frozen meat, and fruit, and is the centre of a rich farming district.

5. **Hamilton** (17,000), on the Waikato River, is an important farming and dairying centre. **Cambridge** (2,000), on the Waikato, and **Otahuhu** (4,500), near Auckland, are also important farming centres.

6. **Rotorua** (4,700), is the headquarters of the tourist traffic to the Wonderland of New Zealand, and the chief health resort of the Thermal Springs District.

7. **Hikurangi** (1,100) and **Huntly** (1,800), are coal-mining centres.

Hawke's Bay Province.

1. **Napier** (18,600), on Hawke's Bay, the chief port and the largest town of the Province, exports wool, frozen meat, and dairy produce.

2. **Hastings** (15,000), near Napier, is a large farming and fruit-growing centre, with freezing-works and dairy factories.

3. **Dannevirke** (4,300), on the railway line between Napier and Wellington, is in a rich dairying district formerly occupied by dense bush.

4. **Woodville** (1,100), an important railway junction near the Manawatu Gorge, is a dairying centre, and has a ham and bacon factory.

Wellington Province.

1. **Wellington** (127,000), on Port Nicholson, is the **capital** of the Dominion, and the chief town

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Wellington

and port of Wellington Province. It has the most central and convenient trading position in the country.

2. **Palmerston North** (20,500), near the Manawatu Gorge, an important farming and railway centre at or near the junction of all the main railway lines of the North Island, is also the largest inland town of the island.

3. **Wanganui** (27,000), is an important river-port near the mouth of the Wanganui River, with freezing works and flour mills, and is also the centre of a large farming and grazing district.

4. **Petone** (9,800), near Wellington, on Wellington Harbour, has an important woollen factory, as well as the Government Railway workshops, and meat freezing and preserving works.

5. **Masterton** (8,300), is the chief town of the Wairarapa Valley, a rich farming, dairying, and sheep-rearing country.

6. **Feilding** (4,200), on the Main Trunk railway line to Auckland, etc., has dairy factories, flour mills, and a large timber trade.

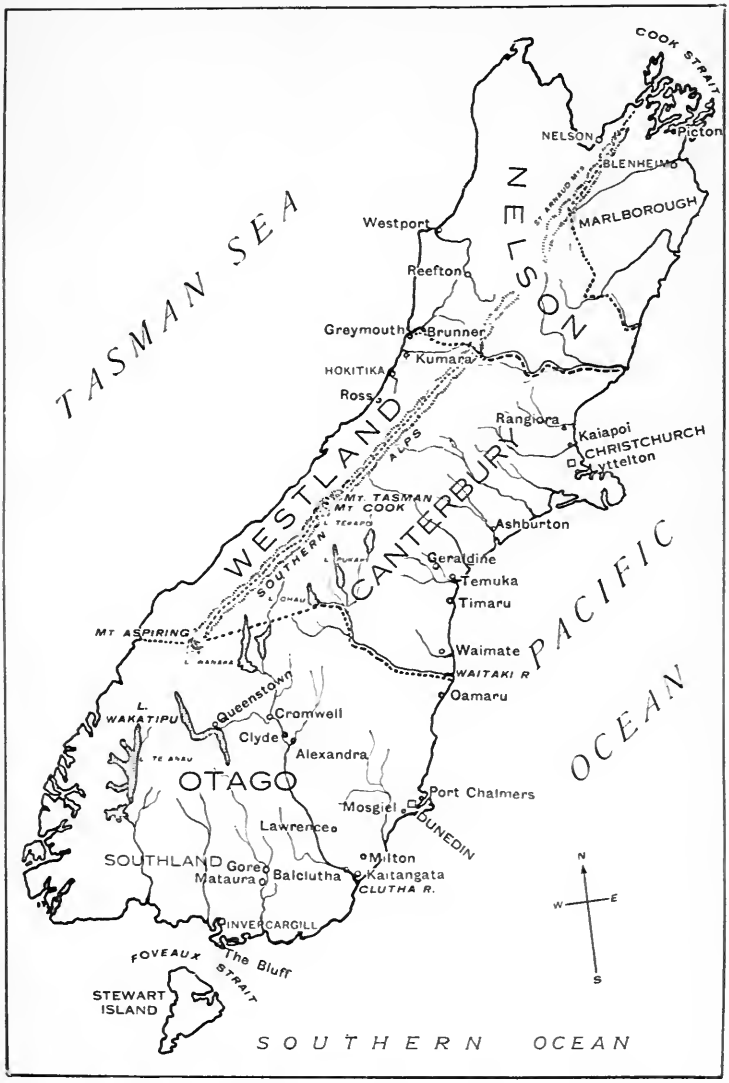
7. **Taihape** (2,400), on the Main Trunk railway, formerly a busy saw-milling centre, is now a farming township. **Foxton** (1,700), and **Marton** (2,700) are important farming centres. The former is a small port with flax-mills, and dairy factories near it.

Taranaki Province.

1. **New Plymouth** (16,700), near Cape Egmont, on Tasman Sea, is the chief town and port of the District, and exports much of the butter and cheese and other farm products so abundantly produced in Taranaki.

2. **Patea** (1,200), and **Waitara** (1,900), are other ports of Taranaki, with meat-freezing works. The former has also butter and cheese factories.

3. **Hawera** (4,500), **Stratford** (3,400), **Eltham** (2,000), and **Inglewood** (1,200) are important inland farming and dairying centres, on the Wellington to New Plymouth railway line.



Map of South Island, showing provincial districts and towns.

13. Chief Towns of the South Island.

Marlborough Province.

1. **Blenheim** (5,100), near the east coast, on the Wairau Plain, is the chief town of Marlborough. It is the centre of a rich farming and pastoral district, and has flour mills, and rope and twine works.

A raspberry orchard, Nelson

2. **Picton** (1,300), on Queen Charlotte Sound, is the chief port of the district, and has freezing-works. **Havelock**, on the beautiful Pelorus Sound, is engaged in the timber trade.

Nelson Province.

1. **Nelson** (12,000), on Tasman Bay, is the chief town and port of the province. It is noted for its orchards and gardens, and its genial climate. Jam-making, fruit-preserving, and biscuit-making are leading industries.

2. **Westport** (3,800), at the mouth of the Buller River, exports large quantities of coal, and is the chief coal-mining centre of the Dominion.

3. **Reefton**, on a tributary of the Buller River, has a School of Mines, and is an important coal and gold-mining centre. The former industry is expanding, but the latter has declined, though it will probably be revived.

N.Z. Govt. Tourist Dept.

Brunner, a coal-mining township, Westland

Westland Province.

1. **Hokitika** (2,400), a small port at the mouth of the Hokitika River, is the centre of a timber producing district. Gold-mining is now of little importance. Its harbour is so poor that it now has very little shipping.

2. **Greymouth** (5,800), at the mouth of the Grey River, is the largest town and chief port of West-

land. It exports large quantities of coal and timber. Near it are **Brunner** (650), another coal-mining town, and **Runanga** (1,300), a township laid out by the New Zealand Government to accommodate the State coal-miners.

3. **Kumara** and **Ross** were once important gold-mining towns. The former is now of little importance, and the latter is now chiefly a timber and dairying centre.

Canterbury Province.

1. **Christchurch** (122,000), the chief town of Canterbury, and the largest city of the South Island, is situated on the Canterbury Plains, a few miles from the mouth of the river Avon. It obtains electric light and power from Lake Coleridge.

Electricity from Lake Coleridge is now supplied to all that portion of Canterbury lying between Rangiora and Timaru.

2. **Lyttelton** (3,700), on Lyttelton Harbour, is the chief port of North Canterbury, from which the wool, frozen-meat, and other produce of the plains are shipped.

3. **Kaiapoi** (1,700), at the mouth of the Waimakariri, is a small port, and is noted for its large woollen mills, where tweeds, blankets, rugs, and other woollen goods are manufactured, and for its freezing works.

4. **Ashburton**, including its suburbs of **Hampstead** and **Tinwald**, has a population of over 6,000, and is one of the chief farming centres of New Zealand. It has woollen mills, freezing works, and flour mills.

5. **Rangiora** (2,100), on the Ashley River, is a large farming centre with flour-mills.

6. **Timaru** (17,000), on the east coast, on an excellent (breakwater) harbour which is accessible

to large ships, is the port and chief town of South Canterbury. It has many manufactures, including frozen-meat, woollen goods, and flour.

7. **Waimate** (2,200), **Temuka** (1,800), and **Geraldine** (1,000), are important farming centres of South Canterbury.

N.Z. Govt. Tourist Dept

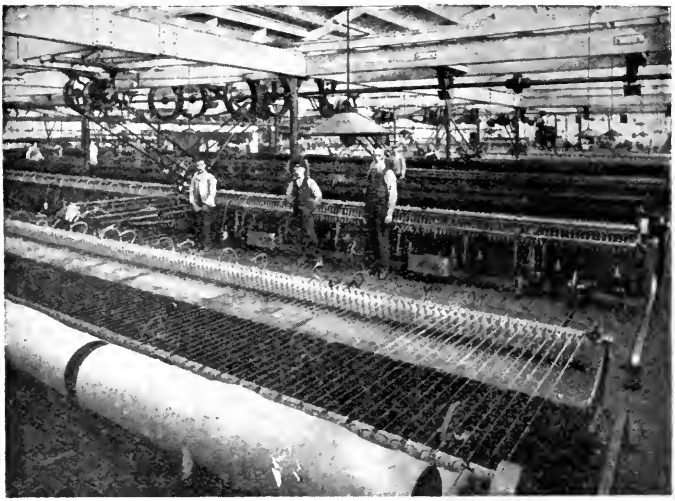
Dunedin, looking south

Otago Province.

1. **Dunedin** (83,000), on Otago Harbour, is the chief port of the province, and is one of the best-built cities in the Dominion. It has large woollen mills (at Roslyn), meat-freezing works (at Burnside), and, being near large coalfields, has numerous manufactures. Its port for large shipping is **Port Chalmers** (2,600), some eight miles nearer the harbour mouth.

2. **Invercargill** (22,500), near the south coast, is the chief town of the farming and timber district of Southland, and manufactures frozen meat, dairy produce, flour, and woollen goods.

3. **The Bluff** (1,600), on Bluff Harbour, is the port of Invercargill and Southern Otago, and the first and last port of call for Melbourne steamers. It is



Wool-spinning, Mosgiel Woollen Factory

the centre of the Stewart Island and Foveaux Strait oyster and cod fisheries.

4. **Oamaru** (7,200), on Oamaru (breakwater) Harbour, is the chief town and port of the rich farming and pastoral district of North Otago. It has flour mills, freezing works, woollen mills, and limestone quarries.

5. **Gore** (4,000), on the Mataura River, at the junction of the Waimea Plains and the Main Trunk

railway lines, has a large wool and grain trade, besides a dairy factory, and coal mines.

6. **Mosgiel** (1,900), inland, on a tributary of the Taieri River, has large woollen mills, and is the chief town of the fertile Taieri Plains.

7. **Kaitangata** (1,500), on the Clutha River, has large coal mines. Near it is **Balclutha** (1,500), an important farming centre.

8. **Milton** (1,500), on the Tokomairiro River, is a farming centre, with dairy-factories, and a woollen-mill. Lime and cement works are four miles away.

9. **Cromwell, Clyde, Alexandra**, and **Roxburgh**, all on the Clutha River, are important fruit-growing and gold-mining centres, most of the gold being obtained by dredging. Other gold-mining towns are **Lawrence, Arrowtown, Naseby** (declining), and **Queenstown.**

10. **Queenstown**, on Lake Wakatipu, noted for its lake and mountain scenery, is one of the most famous beauty spots of Australia and New Zealand, and is visited annually by streams of tourists.

11. **Mataura** (1,200), on the Mataura River, has freezing and manure works, a paper mill, a coal mine, and a cheese factory.

14. Trade of New Zealand.

1. As New Zealand consists of a number of islands, all its trade with other countries is carried on by sea. Large steamers carry cargoes of wool, frozen-meat, cheese, butter, and other produce, from its ports to other parts of the world. They also bring to its shores from other countries the many different kinds of goods that New Zealanders require in addition

to those produced in their own country, such as machinery, metal goods, woollen, cotton, linen, and silk goods, crockery, glass-ware, sugar, tea, coffee, wine, spirits, tobacco, etc.

2. Most of the Dominion's produce is sent to the ports of London and Manchester in England, for distribution throughout Great Britain. A considerable quantity of it, however, is sent to the United States of America, to Canada, and to our nearest neighbour, Australia. A little goes to some parts of Continental Europe, particularly to France, and the rest mainly to British Possessions in the Pacific and in Asia.

3. Most of the frozen-meat and dairy produce is carried to England in large steamers that are specially fitted with freezing chambers. Other produce, such as wool, tallow, skins, hides, and flax-fibre, is also carried there in large cargo steamers.

4. The greater part of the goods, or general merchandise that is brought to New Zealand comes from Great Britain. Considerable quantities, however, are brought also from Australia, the United States of America, Canada, Japan, and some of the countries of Continental Europe. Tea we obtain principally from Ceylon, and a little from Java, and raw sugar from the Fiji Islands.

15. Travelling and Carriage of Goods.

1. In New Zealand most people travel on the railways, which run through nearly all the principal towns of the country. Different lines of motors or coaches run to most of the other towns. The rivers are not used a great deal for the carriage of either goods or passengers, principally because they are not deep enough for large vessels, or because the goods can be more conveniently carried by rail or road.

2. Most of the general merchandise is carried by rail through the country, although there are many places inland to which the railways do not yet run. To and from these places the goods are carried by motor lorries or wagons, and the passengers by motor or coach, from and to the nearest railway stations; whence they proceed to their destination.

3. Some steamers go direct to England; others go to America and Canada, carrying mails, passengers, and goods. Others, again, ply constantly to and from Australia for the same purpose. Passengers who desire to go to England through the Suez Canal are taken first to Australia, and then proceed on their journey. Since 1917 some steamers have made regular use of the Panama Canal to shorten the route to England.

4. The mails, passengers, and goods that are brought to New Zealand from over the sea, are landed at the principal ports of the Dominion, and are then carried by rail to their destination.

16. Tourist Traffic.

1. Many people visit New Zealand in order to view the beauties of its scenery. Most of these go to the **Wonderland** of New Zealand, in the middle of the North Island, in order to see the great geysers, hot lakes, hot springs, mud volcanoes, and other wonderful sights to be seen there.

2. Others visit the glaciers and mountain scenery of the Southern Alps, round about Mount Cook, or visit Queenstown and the cold lakes of Otago. Others, again, make excursions to the Marlborough and Otago Sounds, or go to view the river and harbour scenery of the North Island, particularly that of the Wanganui River.

3. Some people visit the Dominion for the sake of its trout-fishing, duck-shooting, or deer-stalking; others come to it in the hope that its genial climate and healing springs will improve their health.

4. Many of those who are in search of health visit the hot springs of Rotorua, Te Aroha, and Hanmer Plains, where there are Government Sanatoria* for their convenience and comfort.

II.—SOME IMPORTANT COUNTRIES OF THE WORLD.

1. THE COMMONWEALTH OF AUSTRALIA.

States and their Capitals.

1. A glance at the map of the World will show that the **Commonwealth of Australia,** which consists of six **States** and one **Territory,** lies to the south-east of Asia. It includes the island-continent of Australia, the island of Tasmania, and the eastern portion of New Guinea. The Tasman Sea separates it from New Zealand.

2. The six Australian States and their capitals are:—

STATE	CAPITAL	SITUATION
1. Queensland	Brisbane	On the Brisbane R.
2. New South Wales	Sydney	On Port Jackson
3. Victoria	Melbourne	On Port Phillip
4. South Australia	Adelaide	Near St. Vincent Gulf
5. Western Australia	Perth	On the Swan River
6. Tasmania	Hobart	On the Derwent Est.

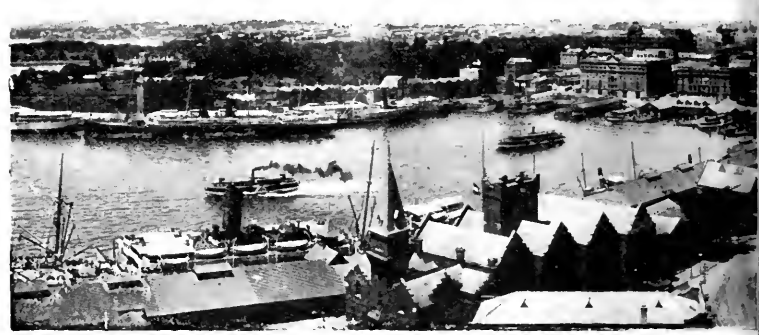
(1) **Brisbane** (263,000), near the mouth of the Brisbane River, is the capital and chief port of Queensland.

*Hotels for the cure of invalids.

The Commonwealth of Australia.

2. **Sydney** (1,039,000), on Sydney Harbour, one of the largest and most beautiful harbours in the world, is the capital and chief port of New South Wales, and the largest city in Australia.

(3) **Melbourne** (912,000), near the mouth of the Yarra River, which leads into the spacious harbour of Port Phillip, is the capital and chief port of Victoria, and is one of the finest and best-built cities in the world.



Circular Quay, Sydney

(4) **Adelaide** (303,000), on the Torrens River, is the capital and chief commercial city of South Australia.

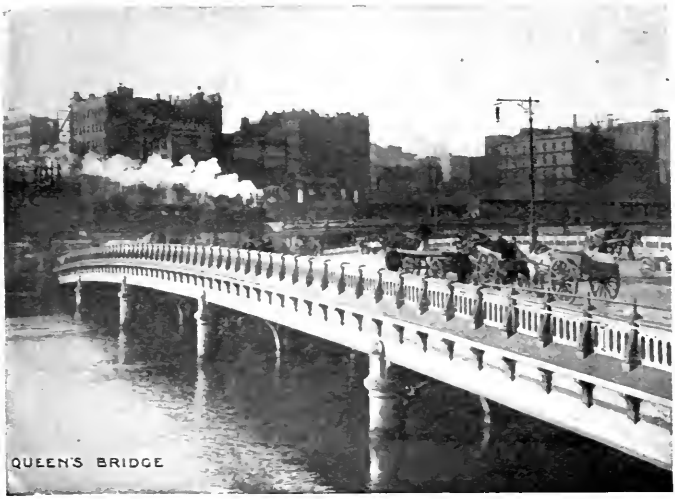
(5) **Perth** (179,000), on the Swan River, is the capital of Western Australia. Its port is **Fremantle.**

(6) **Hobart** (55,000), on the Derwent Estuary, is the capital and chief port of Tasmania.

Federal Capital.

The Parliament for the whole of Australia is called the Federal Parliament. Until 1927 it met at **Melbourne**, which was, for the time being, the **capital** of the Australian Commonwealth. A site

on the Molonglo River, a tributary of the Murrumbidgee, has, however, been fixed upon for the **permanent capital,** where the city of **Canberra** is now being laid out and built. In May, 1927, the Federal Parliament met for the first time at **Canberra,** which then became the capital of the Commonwealth. **Canberra lies within the State of New**



Melbourne and the Yarra River

South Wales, but, being Commonwealth property, is not a part of that State.

Government.

1. Each State has its own Parliament, meeting in its capital, (Sydney, Melbourne, etc.), to manage its own local affairs; but the general government of the whole of the Australian Commonwealth is carried on by the Federal Parliament, which now meets at Canberra, the Federal capital.

2. The country lying to the north of South Australia, between Queensland and Western Australia, is known as the **Northern Territory.** It does not form a portion of any of the States, but is ruled directly by the Commonwealth Government. Its chief town is **Darwin,** on Port Darwin.

3. **Papua,** or **British New Guinea,** as well as what was formerly German New Guinea (now the Territory of New Guinea), is also under the control of the Federal Government.

2. THE GREAT DOMINIONS OF THE BRITISH EMPIRE.*

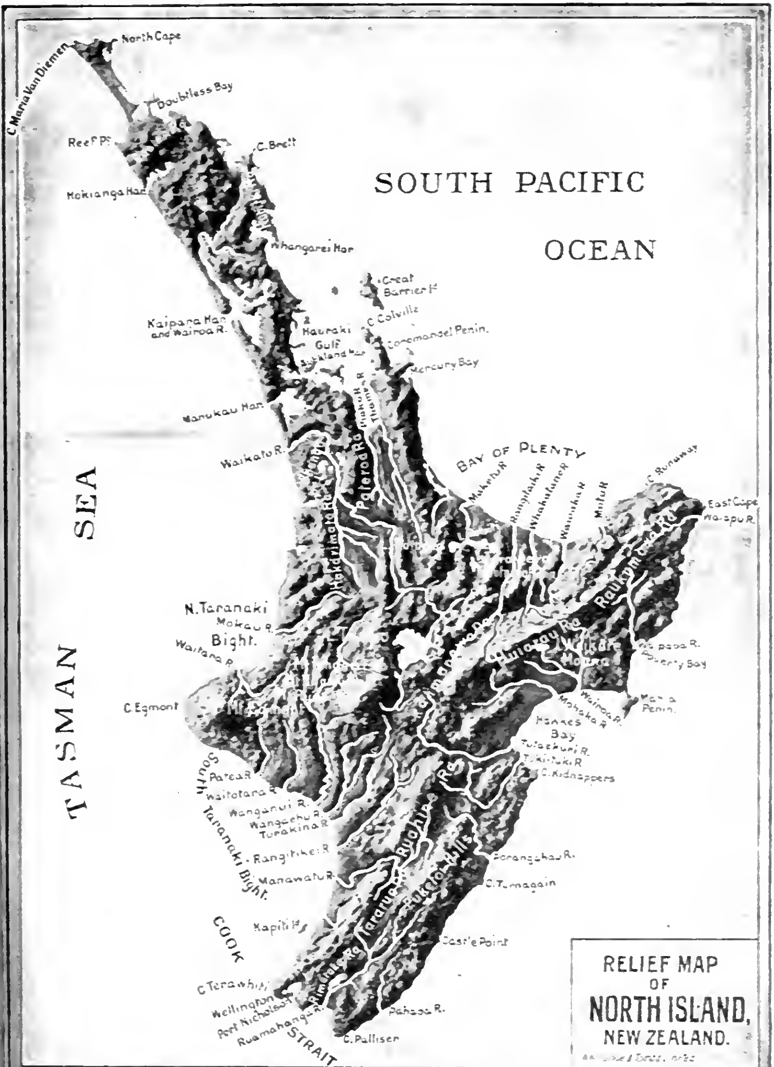
1. The **British Empire** consists of the **United Kingdom of Great Britain and Ireland,** the great **self-governing Dominions,** the **Dependency of India,** and a large number of **other colonies** in different parts of the world.

2. The Self-governing Dominions elect their own parliaments, and make their own laws, a few of which, however, must be approved of by the British Government before they can become law. The chief self-governing Dominions are:—

1. The Commonwealth of Australia.
2. The Dominion of Canada.
3. The Union of South Africa.
4. The Dominion of New Zealand.
5. The Irish Free State.

3. One of the most important parts of the British Empire is the **Empire of India** which is known as a **Dependency.** It is not a self-governing possession, but it is under the direct control of the British Government, though steps are being taken to allow the natives more and more power in the government of the country.

*See Map of the World. p. 55.


SOUTH PACIFIC
OCEAN
TASMAN SEA
BAY OF PLENTY
COOK STRAIT
North Cape
C. Maria Van Diemen
Doubtless Bay
Reef Pt.
C. Brett
Hokianga Har.
Whangarei Har.
Great Barrier I.
C. Colville
Kaipara Har. and Wairoa R.
Hauraki Gulf
Coromandel Penin.
Mercury Bay
Manukau Har.
Waikato R.
Pateroa Ra.
Hakarimata Ra.
East Cape
Waiapu R.
Raukumara Ra.
N. Taranaki Bight.
Mokau R.
Waitara R.
C. Egmont
Huiarau Ra.
Poverty Bay
Mahia Penin.
Wairoa R.
Mohaka R.
Hawkes Bay
Tutaekuri R.
C. Kidnappers
South Taranaki Bight.
Patea R.
Waitotara R.
Wanganui R.
Wangaehu R.
Turakina R.
Rangitikei R.
Manawatu R.
Ruahine Ra.
Porangahau R.
C. Turnagain
Kapiti I.
Tararua Ra.
Castle Point
Rimutaka Ra.
C. Terawhiti
Wellington
Port Nicholson
Ruamahanga R.
C. Palliser
RELIEF MAP
OF
NORTH ISLAND,
NEW ZEALAND.

RELIEF MAP OF SOUTH ISLAND, NEW ZEALAND.